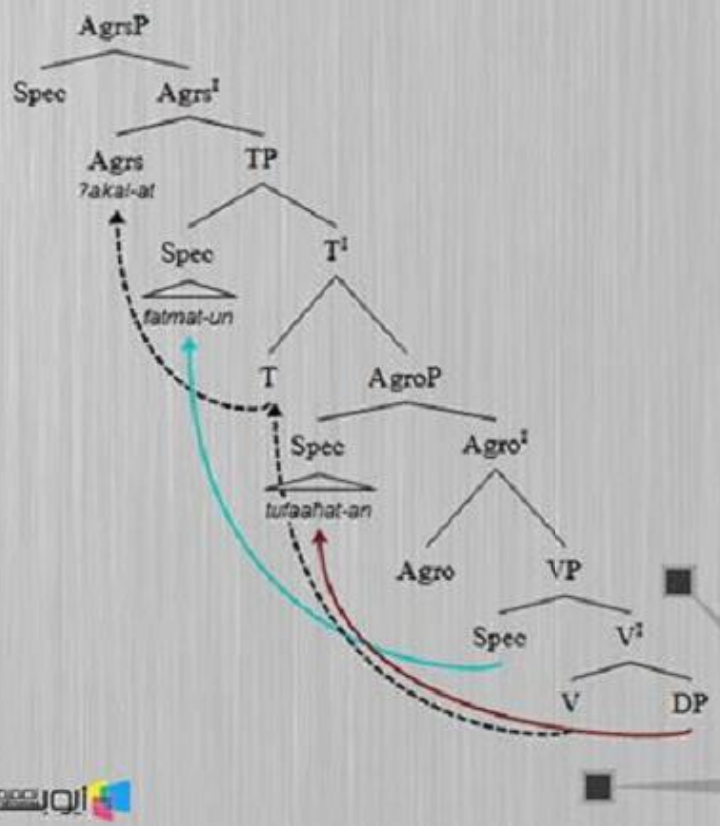
This book is based on Chomsky's generative grammar developed specifically within the *P&P* Framework. It is clearly organized and easily accessible providing the readers with the basic tools and essential requirements to easily understand syntax and syntactic analysis especially with examples from different languages and of different nature and typology, viz. those belonging to Semitic, Indo-European, Siouan, Austronesian language families among others. It also introduces students to the study of language starting with the human knowledge of language and language acquisition, walking them through words, constituency, constituent structure, PSRs and ending in X^{1} Theory. This book is, hopefully, a basic introduction to the study of syntax. It is, however, a fundamental course for undergraduate students and could be of some value to those students embarking on courses which are devoted to the study of syntax in postgraduate levels. It could also be of some value to those students of other disciplines like cognitive science and computational linguistics and those who have interest in the study of language in general through the linguistic phenomena involved and the different languages made use of exemplifying such phenomena.



Dr . Mohammed Shormani

An Introduction To English Syntax

An Introduction To English Syntax

Mohammed Shormani

Ibb University

AN INTRODUCTION TO ENGLISH SYNTAX

Mohammed Q. Shormani
(MA.& Ph.D. Linguistics)

For Mom,
And
The Late

For the soul, and her wings

This page is intentionally left blank

First published 2013, by Aden Printers & Publishers

© Mohammed Shormani 2013

All rights reserved. No part of this publication may be reproduced,stored in a retrieval system or transmitted in any form or by anymeans electronic, mechanical,photocopying, recording orotherwise without the prior written permission of the author.

Permissions may be sought directly from the author, Mohammed Shormani,English Department, Faculty of Arts,Ibb University, Yemen.P.O. Box: 70270,

email:dshormani@gmail.com

Cultural OfficeBook Registration&Copyright

A catalogue record for this book is available atthe Cultural Office Registration and Copyright, Ibb, Yemen, No. (57) 2013.

جميع حقوق التاليف والطبع والنشر محفوظة ولا يجوز نشر او اقتباس اي جزء من هذا الكتاب او اختزان مادته بطريقة الاسترجاع او نقلها على اي وجه او اي طريقة سواء كانت الكترونية او ميكانيكية او تصوير او تسجيل او بخلاف ذلك - باستثناء الاقتباسات العلمية المتعارف عليها - دون اخذ اذن خطي من المؤلف.

رقم الايداع في المكتب الثقافي-ادارة المصنفات الفنية والملكات الفكرية (٥٧)- إب.

لسنة ٢٠١٣م

الطبعة الاولى- ٢٠١٣

عدن للطباعة والنشر- تعز

تلفون: ٢٤٣٢٧٦ ٤ ٩٦٧

بريدالكتروني: aden_print@hotmail.com

IPA Symbols Used in this Book

IPA Symbol
[ʔ]
[a/aa]
[b]
[t]
[θ]
[j]
[ħ]
[x]
[d]
[ð]
[r]
[z]
[s]
[š]
[ṣ]
[ḍ]
[ṭ]
[ðˤ]
[ʕ]
[ɣ]
[f]
[q]
[k]
[l]
[m]
[n]
[h]
[w/u/uu]
[y, ii]

Contents

1 Human Language and Syntax....11

1.1. Knowledge of Language....11

1.2. Properties of Human Language....13

1.2.1. Species-specific....13

1.2.2.Stimulus-free....13

1.2.3. Creativity....14

1.2.4. Arbitrariness....14

1.2.5. Novelty....14

1.3 Language and the Individual....15

1.4 The Concept and Nature of Syntax....15

1.5. Defining Language....17

1.6 The Purpose of Studying Syntax....19

1.7. Lexicon....21

1.8 Defining a Word....22

Summary....23

Suggested readings....24

Exercises....24

2 Words and Word Classes....25

2.1. Words and Word Classes....25

2.2. Criteria for Word Classes....26

2.2.1. Morphological Criteria....26

2.2.2. Morpho-syntactic Criteria....27

2.2.3. Syntactic Criteria....28

2.2.4. Semantic Criteria....29

2.3. Word Classes vs. Parts of Speech....29

2.4. Phrases....30

2.4.1. Tests for Phrases 31
2.4.1.1. Transposition 31
2.4.1.2. Substitution 35
2.4.1.3. Ellipsis 38
2.4.1.4. Coordination 38
Summary 40
Suggested Readings 41
Exercises 41

3 Clauses and Sentences 43
3.1. The Nature of Clause 43
3.2. Finite and Nonfinite 44
3.3. Main and Subordinate Clauses 46
3.4. Relative clauses 47
3.5. Adverbial Clauses 49
3.6. Complement Clauses 50
3.7. Sentences 53
3.7.1. Syntax Criteria 53
3.7.1.1. Simple Sentences 53
3.7.1.2. Compound Sentences 54
3.7.1.3. Complex Sentences 54
3.7.2. Semantic Criteria 55
3.7.2.1. Declarative sentences 55
3.7.2.2. Interrogative sentences 56
3.7.2.3. Imperative sentences 56
3.7.2.4. Exclamative sentences 57
Summary 57
Suggested Readings 58
Exercises 58

4 Grammatical Relations 60
4.1. Grammatical Relations 60
4.2. Word Order 60
4.3. Agreement 66
4.4. Case Marking 72
4.4.1. Case Assignment and Assigners 76
Summary 77
Suggested Readings 77
Exercises 77
5 Modification 79
5.1. The Nature of Modification 79
5.2. Heads and Modifiers 80
5.2.1. Premodifiers and Postmodifiers 80
5.3. Heads and Complements 82
5.4. Heads and Adjuncts 86
Summary 87
Suggested Readings 88
Exercises 88

6 Constituent Structure 90
6.1. Constituency and Psychology 90
6.2. Constituent Structure in Syntactic Analysis 91
6.3. Phrase Structure Rules 96
6.3.1. How to Draw Tree Diagrams 96
6.3.2. Noun Phrases (NPs) 97
6.3.3. Adjective Phrases (APs) 100
6.3.4. Adverb Phrases (AdvPs) 101

6.3.5. Preposition Phrases (PPs) 102
6.3.6. Verb Phrases (VPs) 103
6.3.7. Sentences (S) 108
6.3.7.1. Aux as a Constituent 110
6.3.7.2. T as Part of Aux 113
6.4. Recursion 120
6.5. Generalizing PSRs 121
6.6. Application of PSRs to Other languages 121
Summary 126
Suggested Readings 126
Exercises 126

7 Lexicon 129
7.1. The Nature of Human Lexicon 129
7.2. Syntax and Lexicon 129
7.2.1. Verbs and Subcategorization Properties 131
7.2.1.1. Verbs Subcategorizing for no Constituent 133
7.2.1.2. Verbs Subcategorizing for a Constituent 134
7.2.1.3. Verbs Subcategorizing for two Constituents 135
7.2.1.4. Verbs with Multiple Subcategorizations 136
7.2.2. Nouns and Subcategorization Properties 138
7.2.2.1. Nouns Subcategorizing for a Constituent 138
7.2.3. Adjective Subcategorizing for a Constituent 141
7.3.2. Verbs and Selectional Restrictions 142
Summary 147
Suggested Readings 148
Exercises 148

8 X-bar Theory 150

8.1. Syntax as a Scientific Discipline 150

8.2. X^{I} Theory 150

8.2.1. Tree Diagrams and Terminology in X^{I} Theory 152

8.2.2. Binary Branching 153

8.2.3. Motherhood, Daughterhood and Sisterhood 153

8.2.4. X-bar Schemata 153

8.2.5. Projection in *X-bar* Theory 155

8.2.6. Drawing a Tree Diagram 158

8.2.7. Adjuncts and Complements 159

8.2.8. X^{I} Theory and Non-lexical Categories 164

Spec-Head Agreement 167

The Computational System 170

Trace Convention 173

8.2.9. Application of X^{I} Theory to Other languages 175

Summary 180

Suggested Readings 179

Exercises 180

Bibliography 183

Index 196

FOREWORD

An Introduction to English Syntax takes a refreshingly original approach to the study of syntax within the paradigm of generative linguistics. While most textbooks present the theory current at the time of its writing, ***An Introduction to English Syntax*** presents syntax in a quasi-historical perspective. For a beginner student, the usual introduction to sentence structure is through the descriptions of grammar they may have encountered in the course of school and early college. A textbook that employs the descriptive categories in the transition to contemporary syntactic study provides a way of bridging the gap between the two traditions. In this sense, this is not just another textbook on syntax. It is one that will start students who use the book on an exciting journey into the fascinating world of our knowledge of language.

John Eliezer

Sultan Qaboos University

Oman

PREFACE

It is a fact that when one writes a book, one has to set forth some objectives the book could hopefully fulfill. A book on syntax is not like any other book on linguistics for the fact that syntax theorization never stops due also to the now-and-then problems facing syntacticians arising from the complexity of the subject matter involved, linguistic typology, language variation and the nature of human language as a whole. Human language is deemed to be a very systemized, rule-governed, precise and concise system having multiple functions but not limited merely to communication and syntax is the tool of such functions. I may not exaggerate to say that syntax is considered the "heart" within a full body, viz. language, and we all know what a heart does. In fact, syntax is considered the core of producing precise and concise pieces of language.

The basic tenet that makes me write this book is that I have taught syntax to my undergraduate students of English at Ibb University for three years but I could not to some extent find an appropriate book on syntax that could meet what Arab students including Yemenis need or are supposed to learn in English syntax. This is due to the fact that the books I have taught are of two types based on the readers they address. They are either written for English native students, viz. those whose mother tongue is English or for those students of English as a second/foreign language but whose mother tongue is not Arabic. Another reason for writing this book is the fact that a considerable

number of the syntactic errors committed by my students are ascribed to the interference of Arabic syntax. This actually needs to be considered due to the fact that transfer from mother tongue has been proved true by a considerable number of linguists though I believe that such transfer is not the only and the main reason. If this is so, it follows that we have to seek appropriate and adequate materials to be taught that could fill up this gap. In other words, Arabic-speaking students need to be exposed to how syntactic rules and structures of English work and compare them to those of Arabic so that each has to be dealt with on its own right and how mixing them results in ill-formed or ungrammatical syntactic pieces of language, be they phrases, clauses and/or sentences, though the main objective of this book is not comparing Arabic to English syntax.

This book is based on Chomsky's generative grammar developed specifically within the P&P Framework, starting from PSRs to X^{I} Theory. It is clearly organized and easily accessible providing the readers with the basic tools and essential requirements to easily understand syntax and syntactic analysis especially with examples from different languages and of different nature and typology, viz. those belonging to Semitic language family, those belonging to Indo-European, those belonging to the Siouan language family, Austronesian language family among others. It also introduces students to the study of language starting with the human knowledge of language and language acquisition, walking them through words, constituency, constituent structure, PSRs and ending in X^{I} Theory. This book is, hopefully, a basic introduction to the study of syntax. It is, however, a fundamental course for undergraduate students and could be of some value to those students embarking on courses which are devoted to the study of syntax in postgraduate levels. It could also be of some value to those students of other disciplines like cognitive science and computational linguistics and those who have interest in the study of language in general through the linguistic phenomena involved and the different languages made use of exemplifying such phenomena.

To Readers

This book is set to develop a syntactic theory based mainly on English language within the generative grammar and applying such a theory to a number of languages such as English, French, German, Hindi and Arabic throughout the book. Some other languages such as Lakhota, Basque and Toba Batak are also briefly involved for the purpose of clarifying, exemplifying and/or evidencing some syntactic phenomena arising from language variation. Involving such languages makes the book different from others in scope and purpose. In that, it addresses different readers and of different mother tongues.

In Chapter 1, I briefly discussed the relation between human language and syntax and syntactic analysis where I began with describing our knowledge of language and how this knowledge is precise and concise. We acquire this knowledge as naturally as leaves coming to a tree because we are humans are endowed with a language faculty which is a container of rules and predispositions that make us able to acquire such knowledge. These rules and predispositions constitute what is known as Universal Grammar which all humans possess innately, tacitly and genetically. This view has been held by ***Mentalism***, a theory of language acquisition advocated and developed by the American linguist Noam Chomsky. However, another theory has accounted differently for our language acquisition. This theory is known as ***Behaviorism*** advocated and developed by Skinner which sees language acquisition as a habit formation comparing us to animals like rats and chimpanzees learning to do simple tasks. This Chapter also investigates several issues like properties of human language, the concept and nature of syntax, defining language, the purpose of studying syntax among other issues.

Chapter 2 deals with words and the linguistic criteria of classifying them. These criteria include syntactic, morphological, morpho-syntactic, etc. In fact, these criteria result in a radical change from what was traditionally called "parts of speech" into lexical categories defending the latter as being more appropriate and linguistically adequate than the former which was based merely on one aspect, viz. the meaning of the word. In this Chapter, the different types of phrases including NPs, APs, PPs, etc. have been discussed and contrasted. To determine whether a piece of language is a phrase or not, tests for phrases like transposition, substitution, coordination and ellipsis (i.e. deletion) have been discussed and examples from different languages have been made use of. Chapter 3 has been devoted to discussing clauses and sentences. Different types and subtypes of clauses including finite and nonfinite, main, subordinate, relative, adverbial, complement clauses, etc. have been discussed, explained and exemplified. Moreover, sentences and their types have been classified based on two criteria, viz. syntax and semantics. They have also been discussed, and exemplified. These sentences are divided into different types including simple, compound and complex based on the syntactic criteria involved and declarative, interrogative, imperative and exclamative based on the semantic criteria. Chapter 4 discusses grammatical relations. In fact, grammatical relations are those which are concerned with the relations among words in a piece of language, be it a phrase, a clause or a sentence. Such relations are manifested syntactically among words in phrases, phrases in clauses and clauses in sentences. Such relations including word order, agreement and Case marking have been discussed and exemplified involving different languages.

Chapter 5 provides the reader with a thorough account on modification in terms of its nature, types of heads, modifiers, adjuncts, complements, etc. These all have been

discussed and exemplified involving different languages. Chapter 6 introduces ***constituent structure***. It begins with the psychological relation between our minds and the concept of constituency and how this relation is essential to syntactic analysis. What we mean by constituent structure is mainly a phrase internal structure and how it can be represented structurally by means of tree diagrams. For this all, Phrase Structure Rules (PRSs) have been developed for each different head, be it an N, an A, a P, a V or an S, reformulating each and every rule to include all possible modifiers, adjuncts and/or complements and of different types a head can take in a phrase, exemplifying each and every rule and representing it in a tree diagram.

Chapter 7 is devoted to accounting for how lexicon is essential to syntax and syntactic analysis. Such an essentiality consists in the fact that there are subcategorization properties and selectional restrictions encoded in every lexical category, be it a noun, a verb, an adjective, etc. which determine some kind of what goes with what in a particular syntactic context. The former can be best understood in terms of the fact that there is an underlying ability of a head to select a complement in terms of its number and type viz. is it an NP, two NPs, NP and PP, S, etc.? The latter, however, concerns which lexical category can co-occur with which lexical category in terms of animacy, humanness, abstractness, concreteness, etc. As far as verbs are concerned, while subcategorization properties concern internal arguments, selectional restrictions concern both internal and external arguments. In fact, while the former belongs more to syntax than semantics, the latter is the other way around. The idea of recursion, i.e. from a finite number of words and rules, an infinite number of phrases and sentence can be produced, has been emphasized. In this Chapter, I have also tried to apply PSRs theory to languages other than English like Hindi, German and Arabic which exhibit different word orders.

Chapter 8 is the final stage of this book. It presents one of the basic principles of the P&P Framework, namely, X^{I} Theory. It starts with discussing syntax as a scientific discipline then goes gradually presenting the basics of this theory in a simple and comprehensive way. Essential to X^{I} Theory is structural representations manifested through some relations like motherhood, daughterhood, sisterhood, binary branching, X^{I} schemata, minimal, intermediate and maximal projections, among other related issues. Unlike PSRs Theory, X^{I} Theory presents and accounts for constituent structure logically. It also solves the problems encountered by PSRs such as distinguishing an adjunct from a complement among others. X^{I} Theory conceptualization of non-lexical categories, viz. functional categories, differs from that of PSRs which has been presented showing such a difference. Some structural issues like ***Spec-Head agreement***, ***trace convention,*** etc. have been discussed and exemplified. Two very

crucial transformations, namely, ***V-Raising to I*** and ***Subject-Raising to Spec-IP*** have been introduced and exemplified. The computational system of human language processing is also introduced. The final site of this Chapter is the application of X^{I} Theory to other languages where different languages belonging to different language families like Semitic as in the case of Arabic, Indo-European as in the case of English, German and Hindi have been involved. In fact, these languages, though belonging to two language families, exhibit different linguistic phenomena with respect to typology, word order, agreement, licensing, etc. However, X^{I} Theory has successfully accounted for such phenomena and language variation.

To sum up, every Chapter introduces the readers to essential further readings in which they can find further and somehow advanced information for the issues tackled in the Chapter. Every Chapter ends up with a good deal of exercises the main aim of which is to assess the students' understanding of the syntactic phenomena discussed in the Chapter.

Acknowledgements

Several people are those who have contributed directly or indirectly to this book to come into existence. I would like to thank all my syntax students at Ibb University particularly Muneef Al-Shawsh, Musa Al-Humaidi, Ayoub Qahtan (the designer of the cover), N. and T. Asha for the hard work they have done in going through the several Chapters of the manuscript, their feedback has been so much good and helped in improving the contents as well as the final layout of the book. I would also like to thank those who have read and commented on the manuscript of this book and whose comments and suggestions have been so much invaluable. Special thanks are due to Prof. N. Chomsky, Prof. R. Millar (for their personal communication), Prof. John Eliezer, who has instilled in me the love of being a linguist, Prof. Yehia Al-Sohbani, my first university spoken class teacher and the one who has always stood by me. I just cannot forget to thank the one who has directed me not to believe just in one particular academic view and thus shaping my linguistic intellectuality, Prof. Panchanan Mohanty.

1 Human Language and Syntax

1.1 Knowledge of Language

Any study that is devoted to investigating and developing syntax of any language should firstly take notice and ensure that language is a very systematized and organized system. This can be best found in its preciseness and conciseness. However, we have nothing to do with acquiring such a systematized system. This is very clear due to the fact that all normal children can acquire language. Children with high or low intelligence can acquire their mother tongue equally for intelligence has nothing to do with such acquisition. We acquire language as natural as we learn how to walk. Language acquisition is, indeed, as natural as leaves coming to a tree. However, this does not mean that knowledge of language is simple but rather the most abstract knowledge humans come across due to being mysterious having human-like nature: it is born, grows, and sometimes dies, and meaning is its vital web. Language is fluid-flexible but sometimes extremely vague. It is species-specific, viz. humans and only humans can acquire language and no other creature could ever succeed in this process.

Accordingly, many linguists (e.g. Gass & Slinker, 2008; Bruner, 1983; Shormani, 2013a) advocate that we acquire language through ***nature*** and ***nurture***. The former accounts for human language acquisition in that we humans are endowed with a faculty in our minds which is concerned with providing us with capabilities necessary for language acquisition. Such capabilities are encoded in our genes. In the latter, however, the nurture provides us with the linguistic input necessarily required for language acquisition to take place. What is exactly meant by the term "nurture" is the family, i.e. the people who speak the language around us. Thus, we acquire language through two phases, namely, pre-linguistic and linguistic. In the pre-linguistic phase, infants start acquiring language by attention-directing and attention-sharing to the objects around them and hence, establishing the referential triangle, viz. "*me, you* and *object*" where *me* refers to

the infant, *you* refers to adults around him/her and *object* to things around (Shormani, 2013a).

The linguistic phase is divided into two subphases, namely, vocal and verbal. The former refers to the cries, cooing and babbling infants make. In the latter, however, infants start producing one-word utterances, two-word utterances, etc. In principle, these utterances stand for complete sentences. For instance, a one-word utterance produced by a child like *Water!* stands for a complete sentence, viz. *I want water* or *I am thirsty.* A two-word utterance like *Daddy home!* stands also for a full sentence meaning *Daddy is at home.* In fact, each phase has its own characteristics and much detail but this is beyond the scope of this book. However, suffice here to say that, in principle, our language evolves through such phases; we internalize the linguistic system of the language being acquired, set rules of our own, try to make our speech like that of the adults around us until we succeed acquiring it as a whole.

Now, one may question the issue of our acquisition of language in that early age when we are unable to grasp abstract objects and things. For this reason, there have been several theories trying to account for our knowledge of language one of which was that we acquire language in SRR (Stimulus-Response-Reinforcement). This actually was advocated by ***Behaviorism*** whose ideas were based on ***Skinner's*** simple experiments on animals (Skinner, 1957). In fact, this theory maintains that language acquisition is a ***habit-formation*** process and hence, comparing our acquisition of language to rats and very simple creatures like chimpanzees learning very simple tasks like learning to get *a banana* when they are left hungry for a long time. However, this view of language acquisition does not stand before those linguists who criticize such "nonsense" attempts in accounting for how we acquire language (Chomsky, 1959, 1968).

Another view has been advocated by ***Noam Chomsky***, the American linguist, who has been one of the leading figures in what is known as ***Mentalism***. To me, as it seems, his ideas are the most reasonable and adequate due to the fact that such ideas have accounted for our knowledge of language in the right perspective. According to Chomsky, humans are endowed with an underlying predisposition which enables them to acquire language. Linguists (e.g. White, 2003, Cook, 2003; Shormani, 2013a) ascertain that such a predisposition is biologically endowed and genetically "instilled" in our brain innately in the form of Universal Grammar (UG) which is "a set of principles, conditions and rules that are elements or properties of all human languages not merely by accident but by necessity" (Chomsky, 1981, p. 7). What we do then in our acquisition is internalize the linguistic system of the language spoken around us provided that we are exposed to sufficient and efficient input of such a language.

1.2. Properties of Human Language

If our argument above is true, it follows then that a human language has to have its own features distinguishing it from other communication systems like those of Birds and Animals. Discussed briefly, the following are the most important properties of human language which make it different from any other system of communication.

1.2.1. Species-specific

As has been alluded to above, what is meant by this property is that it is humans and only humans who can acquire language and no other creature can acquire human language whatever capabilities it has. In fact, this property makes human language a unique system peculiar to human and only human. This is due to the fact that humans are endowed with biological differences distinguishing them from other creatures like animals, birds and so on. They are also endowed with an innate faculty within the human brain that allows them to acquire language whatever this language is. This also has been proved true by a considerable number of experiments involving animals like monkeys, chimpanzees, etc. which were unable to acquire any human language whatever intelligence they have. For instance, Chomsky (1968, p. 58) states that "acquisition of even the barest rudiments of language is quite beyond the capacities of an otherwise intelligent ape."

1.2.2. Stimulus-free

To speak a language, humans are not supposed to have been called for that always. In other words, stimulus is not always necessarily needed to make us speak or talk in our language. In fact, we speak and talk about varied numbers of things which come from accumulated knowledge, memory and imagination. This is simply due to the fact that the human mind deals easily and frequently with past, present and future experiences and what does not exist, or what has not yet existed. This property is not possessed by any other communication system. For instance, if we take how bees communicate as an example, we will find that they do so only when finding a source of food, i.e. a source of nectar. They fly back to their hives and report this discovery and the distance to the site by means of a special dance. Another example is the way birds communicate. Birds communicate via a special song. However, humans *speak,* sometimes even *gossip, soliloquize, write poetry, stories* among others without being asked to do so.

1.2.3. Creativity

From a finite number of words and rules, humans can produce an infinite number of sentences and talk about an infinite number of things or topics. This is what this property means. Creativity is manifested through sounds, words, phrases, clauses and/or sentences. As far as sounds are concerned, let's take the English sounds /æ/, /p/ and /t/ to see how many words can be formed from them. In fact, there are six words these sounds can make three of which are actual words in English, namely, ***æpt, pæt*** and ***tæp***. The remaining three words may exist in some other languages. Some other sounds like /b/, /i/, /d/, /r/, /æ/ can form the meaningful word ***bærid*** which may have a meaning in some other languages like Arabic. These sounds can form the English word ***ræpid*** (with some kind of change in which the sound /b/ is changed into /p/ because the latter does not exist in Arabic.[1] For words, phrases and sentences (see Chapters 6&8) where we will see that from a finite number of words and a finite number of rules, an infinite number of utterances, phrases, clauses and sentences can be produced. In addition to creativity, this property is also called ***productivity*** and sometimes even ***duality of patterning*** though there is some kind of difference among the three terms.

1.2.4. Arbitrariness

What this property means is that there is no relation between a *signifier* and *signified*.[2] The former refers to an object like *car, house, book*, etc. or even a concept like abstract nouns in English such as *honesty, honor*, etc. and the words which name such objects and concepts are called *signified*. Our knowledge about such a property is not necessarily predictable from anything. If you ask a native speaker of English: why the object ***dog*** is called as such, he/she will provide no answer to such a question. Other languages use different words to denote ***dog.*** For example, in Arabic, it is called ***kalb***, in French, ***chien,*** in German, ***hund,*** in Hindi, ***Kuttā,*** in Japanese, ***inu,*** in Spanish ***perro*** and so on. This shows us that when a language names an object, it is just arbitrarily done. Some languages may name an object with the same word as in the case of the object *kursi* called so by Arabic, Urdu and Hindi the reason of which might be borrowing from Arabic.

1.2.5. Novelty

This property simply means that human beings can produce and comprehend new sentences they have never heard or come across before as in *My father met a man on*

1 It is worth mentioning here that the variety of Arabic used in this book is Modern Standard Arabic (MSA).

2 *signifier* and *signified* are two terms used by Ferdinand de Saussure (1857-1913) a Swiss linguist who is called the father of Modern Linguistics.

the moon and brought a lot of fruits from there and these fruits were so ripen (Have you heard such a sentence before?)

Other properties include ***intralingual expressiveness*** which means that every human language is capable of expressing whatever its speakers need to express. ***Open-endedness*** meaning that every language is capable of changing to meet the changing needs of its speakers. New words are coined depending on the need of the society. For instance, in Chaucer's time, the words *computer, kleenex, aspirin* and *helicopter* were not part of the English dictionary and hence, language but now they are. ***Mutual Expressiveness*** which means that a language is capable of expressing whatever meaning other languages can, though a difference in the conceptualization *does* exist.

1.3. Language and the Individual

As has been stated earlier, all human beings can acquire language with some pathological exceptions. For instance, normal humans acquire the language of the society they live in provided that they are exposed to sufficient and efficient linguistic input. For those who are deaf and dumb, they can learn *sign language* because they are actually equipped with innate predispositions like normal humans.

In addition, what has been discussed in (section **1.2**) above gives us an obvious clue that knowledge of language *does* exist in our minds more specifically in our brains but where exactly in our brains? Neuro-linguists maintain that human brain is divided into faculties (rooms). One of these faculties is ***Language Faculty*** the nature of which is, however, not the scope of this book. Suffice here to say that one subfaculty in such a language faculty includes lexicon and another includes syntactic rules which are the main concern of this book.

1.4. The Concept and Nature of Syntax

Thus, bearing in mind the above discussion, now you are able to proceed further to tackle the main concern of this book. As has been stated above, the most fundamental feature of human language is the fact that it is a systematized and organized system. There are certain components and modules for its systematicity and organization to be based on such as *phonology, morphology, semantics, pragmatics* and *syntax*. In other words, language systematicity and organization can be best found in terms of such linguistic modules. However, syntax is our main concern and so other modules are beyond the scope of this book. In what follows, we are going to look at the concept of

syntax, its nature and how it works to make or contribute to the systematicity and organization of human languages.

In fact, the English term "syntax" has its origin in ancient Greek *sy`ntaxis*, which is a verbal noun literally meaning "arranging" or 'putting together'. From a traditional point of view, the term "syntax" refers to a branch of linguistics which deals with how words are arranged showing how they (words) are connected to each other within a particular phrase or a sentence. However, from a modern perspective, syntax is an essential module (component) of human language. It defines the rules according to which a language arranges its words in phrases, clauses and/or sentences.

On the other hand, languages are not the same. This leads us to claim that there are many differences between any pair of languages. Though this is true, languages still share some similarities. For instance, languages such as English and Arabic have specific rules in which words are arranged in the above syntactic units. For instance, at the phrase level, both English and Arabic share the same features. In that, the head of a phrase comes first and then its complement but in a language like Hindi, head comes last (see Chapter 6&8).[3]

The main aim of syntax or syntactic analysis is to explicitly determine each constituent (element) of a sentence and adequately describe such a constituent grammatically and structurally. This actually allows us to say that there is a function the syntax of a language does. This function is to "break down" a phrase, a clause or a sentence into its immediate constituents and assign (give) each constituent a grammatical name/term (its grammatical class/category), i.e. noun, verb, adjective, etc. and a grammatical function, i.e. subject, object, subject complement, object complement, etc.[4] Now, have a look at the examples given in (1a&b) where the words *book, a* and *good* form a grammatical phrase in (1a) but not in (1b).

(1a) a good book
(1b) *book good a

(1a) is a phrase in English while (1b) is not, why? The reason is that (1a) is arranged according to English syntax which specifies that a noun phrase as in (1a) has to be *art.+adj+noun* (art=article, adj=adjective) and violating such an order results in ungrammatical phrases. This points out to the fact that word order is really of great importance. Arabic, however, has another word order. Consider (2a&b) illustrating such an issue.

[3] This is called in the ***Principles and Parameters*** (***P&P***) Framework ***Head Principle*** (part of UG).
[4] See Chapters 4.

(2a) *?al-kitaab-u* *l-jaid-u*[5]
The-book the-good

'The good book'

(2b) **?al-jaid-u* *kitaab-u* *?al-*
The-good book the-

(2a) is a grammatical noun phrase in Arabic but (2b) is not, why? The answer is simply that the former is constructed according to Arabic syntactic rules and the latter is not. It is in this way language, any language works. However, up to this point, we have not come to know what human language is. In the coming section, this point will be made clear.

1.5. Defining Language

The very feature of human beings is the fact that they live together and no one can live alone. Therefore, a human being has been defined as a social creature. The term "social" in itself features human beings and implies that they live in a society in which they share thoughts, beliefs, cultural aspects, opinions, traditions, customs and so on. They also exchange such things in addition to knowledge, wishes, commands, feelings, thanks, declarations and promises. If this is true, it follows that there must be a system for such an exchange to take place. It is a fact that people within a particular community exchange or communicate in their daily life activities through speech but is speech a system? In fact, speech is a tool within a larger system called ***language***.

A traditional definition of language is that it is a conventional system of sounds which people of a particular community use to communicate their ideas, feelings and desires. This definition is based on the *sound system* which, however, seems unsatisfactory for the following facts. First, the term "sound system" does not state what type of sounds they are for there are sounds made by creatures other than humans like animals, birds, insects, etc. In addition, it seems to Sapir (1921, p. 3) that there is something that "prevents" language to be as such, viz. "an instinctive basis that it does not really possess." Another traditional definition based on the sound system is that provided by Bloch and Trager (1942, p. 5) as "a system of arbitrary vocal symbols by means of which a social group cooperates."

[5] *?al-* (the) is written *l-* in the second word due to assimilation phenomenon.

There are also definitions based basically on meaning as the one provide by Wayne (2007) as a system of "symbols that convey meaning, plus rules for combining those symbols that can be used to generate an infinite variety of messages." Sapir (1921, p. 7) gives a definition for language based on communication as "a purely human and non-instinctive method of communicating ideas, emotions and desires by means of voluntarily produced symbols" but again this definition is not satisfactory for the fact that it is merely based on sounds (symbols) because, and as far as communication is concerned, we humans sometimes communicate without sounds like when we laugh, smile, make face gestures and so on and none of which is done by means of sounds.

There are also definitions based on syntax as the one given by Chomsky (1957, p. 2) considering a language "to be a set (finite or infinite) of sentences, each finite in length and constructed out of a finite set of elements" where he means by the latter just the rules which govern such constructions.

All definitions except Chomsky's view language as a means of communication. However, there are certain facts that prevent language from being just a means of communication. In this regard, Chomsky (2002) believes that language is much more complex than being just a means of communication. According to Chomsky, the existence of properties like ***ambiguity*** makes us rethink of such definitions. We usually communicate and say things that turn out to be simple and fall short to express what we actually want. Shormani (2013b) ascertains that if language is designed for communication *per se*, it could have been much simpler than it really is. We also say an utterance, a phrase and/or even a sentence and we mean something else. An example of this is that when you ask someone to lift a heavy table but he/she could not, then you will say: "Oh, you are ***very strong***!" while what you really mean is that he/she is ***very weak.***

In addition to that, language is a rule-governed system controlled by contextualization. For instance, any piece of language, be it a word, a phrase or a sentence may mean something in one context and something else in another context. For example, the word "Hello" may be used to draw someone's attention, to ask who is there, to greet someone, to express dislike among other uses and meanings accompanied with linguistic factors, i.e. vocal but non-verbal factors like *intonation, stress*, etc. and non-linguistic factors, paralanguage factors like the tone of voice. This is just for the word, or more specifically the utterance, "Hello", let alone a complete sentence. In addition, signs play a crucial role in communication as well. For example, the sign used for *winking* can be used for several functions like calling someone to follow you, to warn someone from an expected danger and so on. In addition, a combination of paralanguage and facial gestures can communicate or convey meaning more than what words, phrases and/or sentences can. What is more is that language can be used as a tool for treatment

(medicine) as in the case of treating ***psychic patients***. In addition to what has been said about language, some researchers (e.g. Newmark, 1988) go even further to believe that language is a container of human culture, traditions, ethics and heritage.

Thus, as has been argued for above, defining language merely in terms of communication is not satisfactory in almost all cases. Accordingly, a working definition for language, and hence, in relation to different modules, I believe, should cover all these properties. Thus, language can be defined as *a rule-governed complex system consisting of verbal and nonverbal symbols and signs shared by a group of people, having multiple functions but not merely limited to communicating their ideas, thoughts and desires via words or a combination of such words into lager syntactic units.*

1.6. The Purpose of Studying Syntax

Now, reconsidering the above discussion, you might come up with a question as to why we have to study syntax. Yet, you will certainly understand and can answer such a question if you have an eye widely open and compare (1a&2a) to (1b&2b) above. While the former are syntactically and semantically grammatical, the latter are not. In other words, we study syntax to be able to formulate, construct or build grammatical pieces of language.[6] This is actually a game!! Have you heard of a game of chess and how a player manages to win?

In other words, have you heard of *Mahatma Gandhi*? Ok, I will tell you something about this great man, and to me, even the greatest mankind has ever lived with. This man, though English was not his mother tongue, when speaking, the whole world moves, do you know why? The reason is simply that he *knows* how to play the game with English and how to put things in order regardless of the fact that he had a noble mission. He finally succeeds in getting the Britishers, i.e. the colonizers, out of his motherland peacefully. The most important weapon he had is his *tongue* speaking English, of course, and the secret behind that is that he *knew* how to play the game!!. This game, to me, is ordering and putting English words appropriately which, to me, is manipulating the syntax of what he intended to say.

Another living example you can find is the world living figure, the most influential linguist in the whole world *Noam Chomsky* whose novel ideas have been and still the most influential in the whole world, as far as syntax, and linguistics in general, is concerned, in addition to being one of the humanists who always defends human rights all over the world. It is enough to know about this man that he is among the top ten most quoted

[6] The expression "piece of language" refers to a phrase, a clause or a sentence.

people in the whole world, though the other nine have died, he is still alive. His ideas are most influential in *computer industry* and *programing languages like C++, Python, Perl,* etc. In addition, he is considered the father of contemporary linguistics. Though he has this vast reputation, it is necessary to know that his mother tongue is English but he learns Hebrew in an early age (personal communication). Chomsky, through syntax, also learns several languages like Arabic, Spanish, Italian, etc. and he has revolutionized the study of world linguistics and deeply probed our knowledge of language.

As far as Arab linguists are concerned, Fassi Fehri, a Moroccan linguist, has made a huge contribution to Arabic linguistics walking it through modern and contemporary linguistic theories, specifically syntactic ones. He has studied French, English, German among other linguistics comparing them to Arabic linguistics coming up with so invaluable ideas regarding all modules of linguistics and contributing to the development of world linguistics in general. In fact, there are many modern Arab linguists whose linguistic ideas are so invaluable but Fassi Fehri is considered the most influential as far as contemporary Arabic linguistics is concerned, let alone great traditional Arab linguists like Al-Du'ali (the founder of Arabic syntax), Al-Jurjani, Sībawayh among many others who have contributed in raising the syntactic intellectuality of modern great linguists like Chomsky.

Yet, these figures, though extremely great, are not better than what you are!! The difference, however, is that they knew how to play the game!! It is also of much honor to you if you know that we Arabs are people of eloquence which points out vividly to the use of language, any language.[7] Now, if you really want to play the language game, you have to set forth an aim and have an eye widely open upon it. This aim is mastering syntax of English and Arabic both because mastering syntax equips you with everything needed to play such a game, the language game, of course!

Now, you may be asking or wondering why syntax is important to this extent? The answer is simply that syntax makes us able to construct complex pieces of language necessitated by the situation we may come through for daily life is full of different and multiple situations and all in all to convey the meaning we intend to express ourselves through. Now, consider (3) and (4) below.

(3a) A book.
(3b) A good book.

[7] You must be aware of Al-Mu?alaqaat, the well-known poems written in Arabic which were hanged on Alka?abah. You should also think of Al-Jurjani, Sībawayh among so many others and their invaluable books.

(3c) A very good book.
(3d) The very good book which I bought from Sana'a.

(4a) A friend.
(4b) A stupid friend.
(4c) A very stupid friend.
(4d) The very stupid friend who I have ever been with.

Now, if we look closely at (3) and (4), we find noun phrases starting with simple ones and ending in complex ones. If we compare (3a-d) to one another, we can understand (3a) as conveying a simple meaning, i.e. just *a book*, any *book*. Going through the rest of the examples, the meaning gets clearer and clearer till we reach (3d) where we are more specific, more interested and more involved with all our senses in what we see or describe. The same thing can be said of (4a-d) but in a negative sense. In other words, if you have *Ali* as *a friend* who is not close to you and if somebody asks you: how about Ali?, your answer will be a friend! If *Ali* is rude to you, your answer will be (4b). If *Ali* is cheater, your answer will be (4c). If, however, Ali has *stabbed you in the back*, you will say (4d). This is the way we formulate meaning by combining constituents larger and larger and syntax is our *only means*. In other words, meaning is webbed, expressed and/or conveyed through words but those words have to be arranged (syntax) as such to be able to deliver what we mean either positively or negatively.

Thus, it goes without saying that syntax is a systemizing tool which organizes the combination of words into phrases, phrases into clauses and clauses into sentences through which meanings are webbed to deliver our messages in the language(s) we speak. It is a fact; too, that we humans can speak in addition to our own mother tongue one or more languages provided that we learn and/or get exposed to such languages and no creature else can speak a human language.

1.7. Lexicon

As has been stated above, human beings possess a ***language faculty*** where everything related to our capacity of acquiring language is stored. This language faculty is divided into subfaculties. Lexicon occupies a subfaculty in our language faculty. In this section, you will be introduced very briefly to the human-like dictionary humans all possess (see Chapter 7 for an in-depth analysis of what **lexicon** is). Suffice here to say that lexicon is considered the human store of words along with their underlying properties and provide a working definition of the basic concern of lexicon which is ***word***.

In fact, there are many questions that should be addressed here as to what lexicon is, what it includes, how it works among others. Let's take them one by one. For the first and second questions, the answer is simply that lexicon is a dictionary-like organ which includes all the lexes (words) we know in a language, be it our mother tongue or subsequent one(s) we come to learn and/or acquire. Such words include nouns, verbs adjectives, adverbs, etc. what is traditionally so-called ***parts of speech*** and their different and several hyponyms as you have learned in grammar and vocabulary courses previously. From a modern perspective, words are called lexical items and parts of speech are called lexical categories or word classes. For the third one, the answer is provided in detail in Chapter 7 where we provide and explain ***Subcategorization Properties*** and ***Selectional Restrictions***.

1.8. Defining a Word

Now, you might be wondering why a book on syntax like the one you are reading may have a section or a Chapter on lexicon or more specifically words and the study of words belong to morphology. The answer is much simpler than you might ever think. Since words are the "building blocks" of language and since syntax is concerned with how these words are arranged into phrases, phrases into clauses and clauses into sentences, we have thus to tackle and investigate words and how they are related to syntax. What is more to be considered is the fact that linguistics is an interdisciplinary field where no one could ever think of separating one component (module) like syntax from morphology, semantics, etc. Now, the question is what is a word?, is any string of letters considered a word? and is any combination of phonemes, syllables or even morphemes considered a word among others? In fact, answering such questions is not easy, and defining a word is still a matter of hot controversy. A word has been defined taking into account several criteria such as phonology, morphology, syntax, etc. Thus, a **phonological word** is a *string of speech sounds (phonemes) arranged according to the phonetic rules of a particular language*. An **orthographical word** is a *string of letters arranged according to the rules of a particular language having a space on either sides of it.*[8] A **morphological word** is *a unique form where only form and not meaning is considered.* For example, the word *bank* has two meanings, viz. *a financial institution* and *a margin or edge of a river*. It is one word though it has two different meanings. Thus, from a morphological perspective *bank* and *banks* are two morphological words because they are not identical in form, i.e. one with the plural suffix ***–s*** and another without such a suffix. Thus, a word from a morphological perspective is that free morpheme which can be a root alone or a root plus some affixes. From a

[8] Orthography is the conventional spelling system of a language.

lexicographical point of view, a word is one which encompasses the various forms of a lexeme and hence, *write, writes, wrote, writing* and *written* are five morphological forms of one lexicographical word. Lexeme is usually written in capital letters and hence, the lexeme of the word *write* is WRITE. However and from a **semantic** perspective, a word is one which considers *meaning* and not *form*. Therefore, the word *bank* having two meanings, viz. *a financial institution* and an *edge of a river* is two words and not one as far as **semantics** is concerned. Finally and from a **syntactic** perspective, a word is one which can enter in a combinative relation with other words constituting a syntactic piece of language, be it a phrase, clause and/or sentence.

Note that the several definitions we have provided here for what a word is concern its nature as being used in different components of the grammar. Note also that these definitions appeal to language in general and not limited to any particular language. In other words, these definitions of a word can be applied to an English word, an Arabic one and so on. Any native speaker of Arabic and/or anyone who will study this book can apply these definitions to his/her language modules, namely, phonology, morphology, syntax, etc. and make sure whether these definitions apply or not.

Summary

Human language is a rule-governed, systematized and organized system and its knowledge is something every human tacitly, innately and biologically endowed with. The predispositions humans are endowed with are genetically "instilled" in the language faculty every human by nature possesses. Only two of the most recognizable theories have been very briefly tackled which try to account for our language acquisition, namely, ***Behaviorism*** and ***Mentalism***. The former has ascribed language acquisition to *nurture* and the latter to *nature* where biological and genetic factors play the main role in our acquisition process. In principle, every normal child can acquire his/her mother tongue provided that he/she is exposed to sufficient and efficient linguistic input. The most prominent properties of human language consist in being *Species-specific, Stimulus-free, Creative, Arbitrary,* etc. These properties make human language different from other communication systems like those of bees and birds, for instance. However, communication *per se* is not the mere function of language due to several reasons the most important of which is that we *sometimes* communicate without language. This leads us to seek an appropriate definition for language encompassing all the aspects concluding that it is a rule-governed complex system consisting of verbal and nonverbal symbols and/or signs shared by a group of people, having multiple functions but not merely limited to communicating their ideas, thoughts and desires via words or a combination of such words into larger syntactic units. The relation between syntax and language is that syntax comes to existence to put flesh on the bones. In other words,

syntax accounts for how our knowledge of language is represented in a logical way, how language works at the level of structure and how words are structured into larger constituents, be they phrases, clauses and/or sentences. These words are stored in a dictionary-like organ in our language faculty called ***lexicon***. Since words are the "building blocks" of language, a word has been defined in relation to language modules like *phonology, morphology, syntax*, etc.

Suggested readings

For the most adequate description of knowledge of language, see (Chomsky, 1968, 1957, 1981; Clark, 1993, 2003; Baker, 1981; Baker & McCarthy, 1981). For a comprehensive discussion on language acquisition and Universal Grammar, see (White, 2003; Cook, 2003; Shormani, 2013a; Saville-Troike, 2006; Gass & Slinker, 2008). The best definitions of language have been discussed thoroughly in (Sapir, 1921, 1929; Chomsky, 1957, 1968; Newmark, 1988; Bloch & Trager, 1942; Bloomfield, 1933; Yule, 2006).

Exercises

1. Human language is said to be a very systematized, precise and concise system. **Discuss.**

2. If language is *Species-specific*, i.e. humans and only humans can acquire language, how could you account for the language spoken by ***Parrots***?

3. If a child acquires his/her mother tongue from the input produced by adults around him/her, how could you account for ungrammatical pieces of language like:
   a) ***Daddy goed***.
   b) ***Daddy where?***
   c) ***Where you are going?***

4. To study syntax is to understand the nature of language. ***Prove this statement true*** **providing examples in support of your answer.**

5. There is a very essential relation between syntax and lexicon. **Are you pros or cons to this statement**? ***Either, prove your view point.***

2 Words and Word Classes

2.1. Words and Word Classes

In general, words are divided into two types traditionally called **content words** and **function words**. However, from a modern perspective, the two types of words are called **lexical words** and **grammatical words,** respectively. The former includes nouns, adjectives, verbs, adverbs, etc. which have denotation, i.e. they denote something. The latter, however, includes articles, auxiliaries, prepositions, conjunctions, etc. which do not have denotation but they express grammatical relations among words, phrases or sentences to others. In fact, grammatical words express syntactic and/or semantic relations in a given piece of language. However, there are also some linguists, who I agree with, considering auxiliaries and prepositions lexical words arguing that such words have denotation. For instance, the auxiliary *may* in *Ali may come tomorrow* is different from *the* auxiliary *must* in the same example. The former expresses ***possibility*** while the latter ***obligation***.

Traditionally, nouns, adjective, adverbs, verbs, prepositions, etc. were called ***parts of speech.*** These terms were also traditionally defined. For instance, a noun is defined as *the name of a person, place or thing*. A verb was defined as *the word which expresses an action or a state of action*. An adjective is *a word which describes a person, place or thing*. These definitions contain some kind of truth but are inadequate for serious investigation of English or any other language. The traditional definitions of such terms or grammatical classes are inadequate in two aspects:

i) Such definitions consider only the outer surface of a word, i.e. only one part of what a word signifies (the denotation of a word).

ii) Such definitions ignore the way each of such words is used and the company it is supposed to occur with in a particular piece of language, be it a phrase, a clause or a sentence.

Now, the question is how the above two factors are overcome in the concept, definition and use of "word categories." The answer to this question will be the concern of the following section.

2.2. Criteria for Word Classes

In fact, the above among other problems have been the concern of several linguists whatever the language being investigated is, i.e. not merely English. Linguists try to revise such concepts about word categories and come up with some linguistic criteria the most important of which are the following four which go parallel with the major modules of linguistics, viz. ***syntax, morphology, morpho-syntactic*** and ***semantics*** (Miller, 2002). .

2.2.1. Morphological Criteria

Morphological criteria have to do with inflection and derivation. In English dictionaries, for instance, the words ***book*** and ***bookish*** are treated differently. ***Bookish*** is listed as a separate lexical item, that is, it might be listed in the same entry as ***book*** but appears in **bold** and sometimes *italicized* accompanied with a short explanation of its meaning; the form ***books*** has no entry at all, since the dictionary developers assume in advance that such a dictionary users certainly know that ***book*** is the singular form of ***books*** and that they certainly know how to change any singular noun into a plural one and vice versa. This will be clear if we look closely at the following Arabic example. It is said that the singular noun ***kitaab*** can have the form ***kutub*** as its plural form. In addition, it can have the different morphological forms like ***kitaab-an, kitaab-un, kitaab-in*** where ***–un, -an*** and ***-in*** are indicators (markers) of nouns depending on the function of a noun in a particular sentence (this will be clear in criterion 2 below). For verbs, ***–a, -u*** and ***-*** ُ are markers as in *ďarab-a* (beat^{past}), *yaďrib-u* (beat^{present}) and *?iďrib-* ُ (beat^{impreitive}), ***-an*** alone is a marker of adverbs as in ***waaqif-an*** and so on.

2.2.2. Morpho-syntactic Criteria

Morpho-syntactic criteria are concerned with **inflectional morphology in relation to syntax**. In other words, in this criterion, the change happening to a word depends on the syntactic function this word has in a particular context, i.e. ***morpho- syntactic*** where the suffix *morpho-* is used here concerning the morphological markers added to a word, be it a noun, an adjective, an adverb, etc. depending on the context a word is in (i.e. ***syntax***). Consider the English examples *The student is running and The students are running* where *the* word *students* can be broken up into ***student*** and the plural suffix ***–s***. Now, if we look at the nature of both morphemes, we will find that ***student*** is considered the base and ***-s*** is the plural suffix which is suffixed to that base. Another thing to be looked at is that the word class of the word ***student,*** i.e. noun, does not change by the addition of the plural suffix ***–s***. In that, it remains a noun. In other words, to add such a suffix to a noun does not bring about a change to the nature of the word ***student*** as being a noun. However and again from a morphological perspective, the suffix ***–ish*** added to the word ***book*** in the above criteria does bring a change to the nature of the word ***book*** resulting, thus, in a new grammatical class, i.e. *adjective*. However, from a syntactic perspective, the addition of the suffix ***–s*** to the singular noun ***student*** was necessitated by its occurrence in the context *The ___ are running* where only plural nouns can fit in this context due to ***are***. I believe that this point will be clear by considering (1a) and (1b) which exemplify how ***morpho-syntactic criteria*** work in Arabic.

(1a) *?aħmad-u* *ďarab-a* *ʕali-an*
Ahmed.Nom beat.pst Ali.Acc

'Ahmed beat Ali.'

(1b) *ra?ai-tu* *?aħmad-a* *wa:qif-an*
see.pst-I Ahmed standing

'I saw Ahmed standing.'

Now, looking at the noun *?aħmad* in (1a), it has the suffix ***–u***(n). In (1b), it has ***–a(n)***. The suffixes ***–u(n)*** and ***–a(n)*** occur because of syntax, i.e. the position of *?ħmad* in both sentences. In (1a), *?ħmad* functions as the subject of the sentence which requires the –

u(n) suffix necessitated by Nominative Case and in (1b), it functions as the object of the verb *ra?a* (he saw) where the suffix ***–a(n)*** is necessitated by the Accusative Case.[9]

2.2.3. Syntactic Criteria

This criterion is purely syntactic. It determines where a word of whatever category occurs in a piece of language. It also determines which word to occur with which word in such a piece of language, be it a phrase a clause or a sentence. For instance, in English, articles do not occur with adjectives as in **a good* but with nouns as in *a book*. In fact, syntactic criteria are the most important. Now, consider (2a-c) representing English examples:

(2a) *The dog barks at night.*
(2b) *The cat chased the dog.*
(2c) *The man gave nothing to the dog.*

The word *dog* occurs to the left of *barks* in (2a), to the right of *chased* in (2b), and to the right of *gave* in (2c) but separated from it by the intervening word *to*. *Dog* also occurs in a noun phrase and can be modified by an article like *the* as in *The dog barks at night* or by an adjective as in *Fat dogs ate much food* or by an article and an adjective as in *The fat dogs*. This is also true of almost all languages regardless of the position (i.e. either to the right or to the left the word being modified. Now, consider the sentences in (3a&b) below which exemplify this phenomenon in German.

(3a)	*Der Mann*	*sah*	*den Hund*
	The.Nom man	see.pt	the.Acc dog

'The man saw the dog.'

(3b)	*Den Mann*	*sah*	*der Hund.*
	The.Acc Man	see.pt	the.Nom dog

'The dog saw the man.'

In German, what determines the subject and the object is suffixes which are added not to nouns, here, *Mann* (man) and *Hund* (dog) but to articles. In German, the definite article ***Der*** stands for Nominative Case. The article ***Den*** stands for Accusative Case.[10]

[9] See Chapter 4 for a detailed discussion on ***Case*** and ***Case Marking***.
[10] See Footnote 4

Thus, the way German works regarding Case-marking nouns differs from those of English and Arabic.

2.2.4. Semantic Criteria

As the name of this type of criteria implies, meaning plays a crucial role in determining the word class of a given word, i.e. whether it is a noun, verb, adjective, etc. In fact, semantics as a criterion can but not effectively be used to distinguish or determine the word class of a given word. If you remember how words were traditionally defined, you will come to this point. That is to say that words ware traditionally defined only on the grounds of what they denote which, as has been discussed above, is not an effective and sufficient method for that. Thus, from a semantic point of view, a noun is a word which denotes a person, place or thing, an adjective is a word which denotes quality or quantity. In a way or another, this is the criterion on which the words were classified as ***parts of speech***.

2.3. Word Classes vs. Parts of Speech

As has been stated above, classification of words as *parts of speech* is not satisfactory. This is due to the fact that this classification is based only on one aspect, i.e. word meaning. It ignores word use and function. This classification also limits words only to speech and ignores writing. However, in modern linguistics, we use the term ***word classes*** or ***word categories*** or even call words as ***lexical categories*** for the following reasons: first, it is not only meaning that determines the class of a word. For instance, the noun *book* means *a body of papers that we can read*. However, the word *book* is also used as a verb having a different meaning and hence, it is the position of the word (syntax) that determines its category. Second, nouns like *honesty, democracy, altruism,* etc. are not names of persons nor are they names of places or things. Third, verbs do not always indicate actions. If they are so, what about the verb ***be*** and its forms, let alone ***modals*** and linking verbs like ***seem, sound, feel, look***, etc. Thus, the term *word classes/categories* is more self-explanatory and indicative of function, use, property, etc. a particular word has or undergoes in a particular context than what the term *parts of speech* really is..

2.4. Phrases

After looking at words and how they are best classified following certain classification criteria and taking ourselves away from traditional classifications, it is necessary now to proceed to investigate the company these words occur in. In fact, what has been discussed above in this Chapter concerns only single words attributed by many linguists to a linguistic module called morphology. However, as far as the definition of syntax is concerned, it is from now on syntax or syntactic analysis, the main concern of this book, really begins. Now, consider (4a-c) below.

(4a) *Book*

(4b) *The book*

(4c) *The good book*

In (4a), there is a single word, viz. *book*. In (4b), there are two words, namely, the article *the* and the noun *book* and in (4c), there are three words, i.e. the article *the*, the adjective *good* and the noun *book*. Now, if we want to state the difference between (4a) and (4b&c), we will simply say that in (4a), there is only one word but in (4a&b), there is more than one word, i.e. two and three words, respectively. Thus, if (4a) is a word, what about these in (4b&c)? or what are these strings in (4b&c) called? Now, looking again at (4b&c), we find that each one is more than a word. In fact, each is called a ***phrase***. In other words, (4b) is called a ***phrase*** and (4c) is also called a ***phrase***. However, the question to be addressed here is that is it that any string of words containing more than a word is called a phrase? The answer is ***no***. Thus, ***for now***, we will define a phrase as ***a string of related words that has no (un)tensed verb nor a subject.***[11] This definition allows us to construct very long phrases provided that they do not include a main (un)tensed verb nor a subject. Constructions in (5a-d) are all phrases.

(5a) *The book*

(5b) *The good book*

(5c) *The very good book*

(5d) *The so very good book which I bought from Sana'a.*

Examples presented in (5a-d) are all phrases, more specifically, noun phrases. However, there is still a difference between them. In (5a), for instance, the phrase is simple and gets complex and more complex as we proceed to (5d). In fact, a phrase can be even more complex than (5d). In that, we can add the relative clause (see below

[11] In Chapters 6 and 8, the term "phrase" will be extended to include VP and S, i.e. IP.

what a relative clause is) *which is the capital of Yemen* and hence, getting *the so very good book which I bought from Sana'a which is the capital of Yemen*. We can also add whatever words we want to make the phrase in (5d) as long as we wish. However, to ask a question raised above, can any string of words be called a phrase? The answer is again ***no***. A phrase in any language has to be constructed according to the syntactic rules of that language. For instance, an English phrase has to be constructed according to English syntactic rules. An Arabic phrase has to be constructed according to Arabic syntactic rules and so on. This issue will be tackled thoroughly in Chapter 5 when we discuss ***modification***. Suffice for now is to discuss the types of phrases in English and Arabic. As far as lexical phrases are concerned, in almost all languages, phrases are divided into five types. These are a noun phrase **(NP),** an adjective phrase **(AP)**, an adverb phrase **(AdvP)**, a verb phrase (VP) and a preposition phrase (**PP**). However, in contemporary linguistics, another phrase has been introduced to syntax, namely, the Determiner Phrase (**DP**), though it is called sometimes a functional phrase.

Now, to differentiate a phrase from another, we need to introduce the concept of ***head***. We usually talk of heads of humans. We say that the most important part in the human body is the ***head***. Likewise, every phrase of whatever type has a head which is the most important element. For instance, in (5a-d) above which represent a noun phrase, the head is ***book***. So, the head of an NP is a noun. The same thing can be said about other types of phrases. For instance, the head of an AP is an adjective, the head of a VP is a verb and so on. Now, if we want to define a phrase, any phrase, our definition has to be according to the head of that phrase. Thus, an NP is a phrase whose head is a noun, an AP is a phrase whose head is an adjective and so on.

2.4.1. Tests for Phrases

Now, the question worth addressing here is how can we determine that a string of related words is a phrase? In our previous discussion, we said that a string of words constructed in a particular way, for instance, peculiar to English, results in a phrase in that language. In fact, how a phrase is identified has been among the initiative attempts aimed at by syntacticians, and the real beginning of syntax, so as to prove whether a particular string of words is a phrase or not. For this purpose, syntacticians think of some tests. Following are the most important tests set out to determine what constitutes a phrase.

2.4.1.1. Transposition

What is meant by the term "transposition" is simply "movement." As a process applied to *a phrase*, transposition proves that if a given string of words is a phrase, it can be transposed to the beginning or end of a sentence. For instance, the PP *in the kitchen* in (6a) below moving to the beginning of the sentence results in (6b) which proves that the words *in, the* and *kitchen* form a phrase.

(6a) *John read a book in the kitchen*

(6b) *In the kitchen, John read a book*

The difference between (6a) and (6b) is that while *in the kitchen* which is a PP is positioned at the end of (6a) it has been moved to the beginning of (6b), i.e. ***transposed*** and more specifically ***preposed***. In fact, such a transposition indicates that the three separate words, namely, *in, the* and *kitchen* combine into a longer string, i.e. a preposition phrase. Though this transposition here happens to a PP, it can also apply to other phrases. The NP *the problem* in (7a) can be moved to the beginning of the sentence and hence, resulting in (7b).

(7a) *Ali has solved the problem.*

(7b) *The problem, Ali has solved.*

This movement, i.e., the movement of the NP *the problem* from the end of the sentence to the beginning of it is known as ***topicalization***. However, the most noticed movement or transposition is that with regard to adverbs. Examples in (8a-c) clearly illustrate this issue:

(8a) *I go to movies regularly.*

(8b) *Regularly, I go to movies.*

(8c) *I regularly go to movies.*

where the adverb *regularly* moves from the end of the sentence as it is in (8a) to the beginning as in (8b) and finally occupies the pre-verbal position as it is in (8c). Thus, what happens in transposition is that for a string of words to be a phrase, it has to be able to move as has been seen in (7b) and (8b) above. Transposition is thus one of the tests that determine whether a given string of words constitutes a phrase or just words that happen to come in such a sequence. Now, one might think that such a movement is not necessary. However, there are certain facts that prove that sometimes

transposition is essential. The first is that though much research has been done on English syntax, linguists happen to come to find some English structures which are not clear as in the case of (9).

(9) *?The kitchen, Ali read a book in.*

The question mark (?) put before this sentence indicates that such a sentence is not known as whether it is grammatical or not and if yes, is it after all acceptable? According to transposition process and the concept of phrase, yes it is because the NP *The kitchen* forms an NP but it is still of some kind of controversy due to its oddity.

The second factor is that necessitated by the fact that linguists do not merely study English. They actually study languages that have not been or less studied like Dravidian languages found in the southern part of Asia like Telugu, Malayalam, etc. where transposition is a necessary operation to determine some facts of such languages (Miller, 2002).

The first thought of applying transposition comes as a result of ***passivization***. Syntacticians think of applying such a movement to some other elements and it eventually becomes a test for phrases. In fact, transposition as a test is also applied in ***passivization***. Now, consider the active form of the sentence in (10a) and its passive counterpart in (10b)

(10a) *The rich people in our village sent charity to poor people.*

(110b) *Charity was sent to poor people by the rich people in our village.*

Now, what happens here is that the phrase *The rich people in our village* is at the beginning of the sentence functioning as the subject of the sentence in (10a) and refers to the people who sent the charity. It is at the end of the sentence in (10b) but here it is not the subject of the sentence but rather the complement of the preposition ***by***. What causes such a change is what is so-called ***passivization*** in which the subject of the active sentence "disappears" and the same word/phrase functioning as the subject turns up to be a complement of the preposition *by*.

Transposition can also be applied to other string of words in which there is some kind of interesting facts. Now, consider the following examples from (Miller, 2002, p. 14) where transposition applies to *very heavy*.

(11a) This parcel is *very heavy*.

(11b) This *very heavy* parcel was delivered yesterday.

(11c) *Very heavy*, this parcel!

(11d) What this parcel is is *very heavy*.

In (11a), the AP *very heavy* is the complement of the verb *is* occurring at the end of the sentence. It can also be said that it is the subject complement. However, in (11b) it modifies the noun *parcel*. In (11c), which is acceptable only in spoken English, it occupies the beginning of the construction. In (11d) it seems to be the complement of the verb of the matrix clause *is*, namely, the second *is*. In fact, (11d) is called a *cleft* construction. In English, structures involving ***clefts*** are known as *emphatic* constructions the most important function of which is emphasis.

After discussing ***transposition*** *as a syntactic test* for phrases, there might have been a question "roaming" in your mind as to whether such a transposition may have another purpose or benefit. The answer is actually ***yes***. One considerable benefit of transposition is ***focus***. When we want to focus or concentrate on a particular phrase we transpose it especially to the beginning. For instance, in the examples in (7a&b) above reproduced here as (12), the focus is on *the problem*.

(12a) *Ali has solved the problem*

(12b) *The problem, Ali has solved*

(12a) may convey the meaning that ***Ali solved the problem*** and may do that with the help of someone else or has done some other actions like first *wrote the problem* then *discussed it with someone* and then *solved it* but (12b) means that it is only Ali who solved the problem and no one else did. It means also that what Ali did is only *solve the problem* and nothing else. Another example clearly pinpointing the focus of meaning is that given in (11d), i.e. the cleft construction, i.e. *What this parcel is is* ***very heavy***. Where ***very heavy*** has been the focus of the speaker or writer. The same cleft is found in Arabic as shown in (13a&b) below.

(13a)	*laa*	*?aħd-an*	*yaʕrif-u*	*?an*	*xaalid-an*	*jaa?-a*
	not	one	knows	that	Khalid	came

'No one knows that Khalid has come.'

(13b)	*maa-laa*	*?aħd-an*	*yaʕrif-u-hu*	*hua*	*?an*	*xaalid-an*	*jaa?-a*

what-not one knows-it it-he that Khalid came

'What no one knows is that Khalid has come.'

In (13), we can clearly see how clefts in Arabic work and what changes made to the original clause in (13a) to be in the form it has in (13b). The clefting word *maa* (what) is adjoined to the negative particle in Arabic *laa* (not), the clitic pronoun *–hu* has been cliticized to the verb *yaʕrif-u* (know) and the independent pronoun *hua* has been added which is necessitated by clefting. As you can see, (13a) is different from (13b) in that the speaker or writer in (13b) specifies that *what no one knows is that Ali has come* which refers to the state of "coming" which is not the case in (13a) where what is negated is not the state of "coming" but merely negating the subject *?aħd-an* (one). Thus, in (13a), *laa* (not) is a determiner negation particle while it is in (13b) a sentential negation particle. In the former, it is equal to the English *no* and in the latter, it is equal to the English *not*.

2.4.1.2. Substitution

The second test applied to phrases is what is so-called ***substitution***. What is meant by this type is that it is a sort of test in which one word can replace a complete phrase as will be shown in (14) and (15) below.

(14a) ***The very old man*** *gave the woman a book.*

(14b) ***He*** *gave Alia a book.*

(15a) *Ali wrote* ***all the stories of his country****.*

(15b) *Ali wrote* ***them****.*

In (14b), the pronoun *He* substitutes the NP *The very old man* in (14a). However, in (15b), the pronoun *them* substitutes the NP *all the stories of his country*. Now, we notice this phenomenon in the books we read in our study of English whether in linguistics books or in literature ones. In fact, ***substitution*** is a very fundamental linguistic phenomenon. As we have seen in Chapter 1, language is very precise and concise so as to say that such substitution prevents the occurrence of long, wordier and circumlocuted phrases and/or sentences. The example in (16) below illustrates this phenomenon.

(16) ?***The old man gave*** *me a book and* ***the old man*** *sat beside me then* ***the old man*** *had a cup of tea.*[12]

(17a) *Does the old man give you a book?*

(17b) **No, the old man doesn't.* [13]

Though (16) is grammatical, it is actually semantically odd. The oddity here lies in the fact that the NP *the old man* has been oddly and unnecessarily repeated where the pronoun *he* has to substitute the NP *the old man* in the second and third uses. What is more is that sometimes, a repetition of a phrase or not applying ***substitution*** renders a particular piece of language ungrammatical. This is clearly exemplified in (17b) where not ***substituting*** *he* for the NP *the old man* renders the sentence ungrammatical.

All the above discussion on ***substitution*** indicates that substitution can only apply to NPs. Now. The question is that is it possible for substitution to be applied to other types of phrases? In fact, the answer to this question is actually cautiously "yes." *Cautiously* in the sense that substitution cannot be applied to other types of phrases easily. In other words, while pronouns can substitute NPs, such pronouns cannot substitute other types of phrases. Now, consider (18) and (19) below.

(18a) *The man was* ***very tall****?*

(18b) *Yes,* ***so*** *was his wife.*

(19a) *The man* ***came to the party****?*

(19b) *Yes, and his wife,* ***too****.*

As stated above, only NPs can be substituted by pronouns specifically personal pronouns. However, in (18a), there is an AP, namely, ***very tall*** and what substitutes it is ***so*** as it is clear in (18b). In (19a), it is a VP, viz. ***came to the party***. What substitutes this VP is the word ***too***. However, a question that might be addressed here is that do both words, viz. ***so*** and ***too*** have the same features of the pronouns substituting NPs or are there any differences? The answer to such questions is that if we look at the ability of such words to substitute both phrases, namely, ***very tall*** and ***came to the party***, we find that ***too*** conveys the meaning expressed by the latter and ***so*** conveys

[12] The question mark ? stands for those phrases/sentences which are considered odd by native speakers of English because there is some kind of oddity involved in them.

[13] The asterisk * put to the left of sentences indicates that such sentences are ungrammatical, ill-formed and unacceptable to English native speakers.

the meaning of ***very tall*** in the former. However, if we do it the other way around, i.e. using ***too*** in place of ***so*** and/or vice versa, the output is ungrammatical utterances simply because such an otherwise use is not possible. In fact, this is a feature of spoken English as it is clear in (18&19) above which are just an example of dialogue.

In addition, the words ***so*** and ***too*** are called specialized substitution words. The ***so-substitution*** in (18b) is called "indirect". However, it is still a substitution type for the fact that ***so*** has occupied the place of the AP ***very tall***. It is called indirect for two reasons: first, it has been brought to the beginning of the sentence and in this it has some kind of transposition and second, there is a subject-verb inversion like that taking place in English questions. The same thing cannot be said of ***too***, however. In that, what happens to ***so*** cannot happen to ***too*** and hence the answer to the above questions.

There is another type of ***substitution*** called adverbial ***substitution***. This type can be applied to adverbials and the substitutes are ***here*** and ***there***. Adverbials are those adverbs which consist of PPs such as ***in the house, in the morning***, etc. referring to place and time, respectively (there are also clauses called adverbial clauses see section **3.5.**). They are called adverb(ials) because they indicate time or place of the action. However, only adverb(ials) of place can undergo the test of substitution as far as declarative sentences are concerned (see section **3.7.2.1**). Now, consider the examples in (20a&b) and (21a&b) below.

(20a) *The man came to our school.*

(20b) *The man came here.*

(21a) *Ali will go to the United States of America tomorrow*

(21b) *Ali will go there tomorrow.*

In (20b), the adverb of place *here* substitutes the PP adverbial *to our school* in (20a). In (21b), the one word adverb of place *there* substitutes the long PP adverbial *to the United States of America*. Again this is called substitution simply because it goes parallel with the concept of substitution we have been discussing, viz. a word can be used in place of a phrase.

2.4.1.3. Ellipsis

This is another test the use of which indicates that for a piece of language to be a phrase, it has to undergo ellipsis. What is meant by ***ellipsis*** here is the ***deletion*** of such a phrase. Now, consider (22a-d) below illustrating such an issue.

(22a) *The teacher explained the lesson to the students.*

(22b) *The teacher asked the students many questions.*

(22c)*?The teacher explained the lesson to the students and* ***the teacher*** *asked* ***the students*** *many questions.*

(22d) *The teacher explained the lesson to the students and* **[--]** *asked* **[*them*]** *many questions.*

As has been stated above, most of the time we apply ***tests for phrases*** because it is necessitated by the preciseness and conciseness of human languages. (22a) and (22b) represent one sentence each. (22d&c) represent conjoined clauses resulting in one sentence (clauses will be the concern of Chapter 3). Now, if we look closely at (22c), what we will notice is some kind of oddity. This oddity comes from the repetitive use of the NPs **the *teacher*** and ***the students***. However, in (22d), there are actually two tests. The first is that of ***ellipsis*** represented by removing the NP ***the teacher*** whose presence causes some kind of oddity. The second test is that of substitution where ***the students*** in (23c) has been substituted by the pronoun ***them*** in (22d).

2.4.1.4. Coordination

The fourth and final test applied to phrases is ***coordination***. Coordination is a common feature in all human languages. The term ***coordination*** means "putting together." It can simply be defined as a construction which joins two words, phrases, clauses or sentences by means of coordinators. In English, words such as *and, or* and *but* are called coordinators. It is well known in English that these three coordinators usually conjoin words, phrases, clauses or sentences of the same type each, i.e. words with words, phrases with phrases and so on but not, for instance, words with phrases and vice versa or clauses with phrases and vice versa and so on (as far as the definitions of words and phrases provided above are concerned). Now, consider the examples in (23) and (24) below.

(23a) *The teacher and the student came to class.*

(23b) *The teacher and student came to class*

(23c) *The students may meet the teacher in the class or in the office*

(23d) *?? The students may meet the teacher in the class or the office.* [14]

(23e) **The boy is tall and happily.*

(24a) *I want to study English and to study French.*
(24b) **I want to study English and study French.*
(24c) *The teacher explains the lesson and the student writes the notes.*
(24d) **The teacher came to class and the student.*

In (23a), *the teacher* and *the student* have been coordinated with ***and***. Both are NPs. However, (23b) is still grammatical though the first, i.e. *the teacher* is an NP whereas the second *student* is a word. This violates our argument above, viz. coordinating two unsimilar syntactic units. Is it true that it does? ***No, it does not***. In fact, it does not violate our argument at least in this context because here even the word *student* is considered an NP but not a full one, having no article (more on this in Chapter 5). Moreover, (23c) is grammatical where two PPs, namely, *in the class* and *in the office* have been coordinated with ***or***. However, (23d) is not grammatical or at least it is odd and not acceptable in Standard English. The difference between (23c&d) is this while in (23c), two PPs are conjoined, in (23d), a PP, namely, *in the class* and an NP, viz. *the office* have been conjoined. Now, if we look for another NP in (23d) being not part in a larger constituent, it is *the teacher* but not *the class* because the latter is part of a lager phrase, i.e. the PP *in the class*. The meaning conveyed in (23d) is that *the students may meet the teacher or the office* which does not sound normal, let alone being grammatical or not. The ungrammaticality of (23e) lies in the fact that the AP *tall,* violating the sense of conjoining two similar phrases in our argument above, is conjoined with the AdvP *happily*.

In (24a), the nonfinite clause *to study English* has been conjoined with another non-finite clause, namely, *to study French*. However, (24b) is ungrammatical. The ungrammaticality of (24b) can be explained in terms of the ungrammaticality of (23e). In that, the VP *study French* has been conjoined with a nonfinite clause, i.e. *to study English* (see nonfinite clauses in Chapter 3, section **3.2.**). Thus, based on our previous argument, the ungrammaticality of (24b) can be corrected if we put the infinitival *to* before *study French* in which both non-finite clauses will be conjoined, or remove the

[14] The two question marks ?? put to the left of a sentence indicate that the sentence in question is more than simply being odd. It is also unacceptable by native speakers of English.

very *study* in which the two NPs *English* and *French* will be conjoined and hence, obtaining two similar phrases to be coordinated. In addition, (24c) is grammatical simply because there are two main clauses, namely, *The teacher explains the lesson* and *the student writes the notes* conjoined with ***and*** while (24d) is not. The ungrammaticality of (24d) lies in the fact that the NP *the student* is conjoined with the VP *came to class* which are not of the same type. The ungrammaticality of (24d) can be corrected if we add the word ***too*** to the end of the sentence (see (19) above).

In fact, these constraints on coordination can be extended to more than lexical categories, phrases, clauses. In other words, coordination can be applied even to tenses. Consider (26) below.

(25) **Ali played football and breaks his leg.*

The ungrammaticality of (25) lies in the fact that the VP *breaks his leg* whose head, i.e. *breaks* is in present simple tense, has been conjoined with the VP *played football* whose head, i.e. *played* is in past simple. In fact, this type of coordination violates what has been called in grammar books as *tense sequences*. Thus, two VPs to be conjoined grammatically especially with *and* have to be of the same tense, viz. past and past or present and present.

Summary

Linguistics in general is a changing field of study. What has been stated one day about a linguistic phenomenon changes the other day and nothing remains stable. One of these changes we find is that concerning words, their nature and their classification. In this Chapter, a modern and contemporary view to word and word classification has been adopted and adapted. Thus, a word has been looked at as a lexical category rather than a part of speech. This modern view is based on linguistic criteria such as *morphology, morpho-syntax, syntax* and *semantics*. Traditional classifications of words were based merely on meanings (semantics) but this has been proved inadequate due to the fact that most of the time meaning alone is not everything because it denotes only to one feature of "bundle" of features encoded on a particular word. To judge whether a given piece of language is a phrase, there must be a procedure. Tests including *Transposition, Substitution, Ellipsis* and *Coordination* have been used as a procedure for such a judgment. Thus, we have concluded that to be a phrase, a piece of language has to be subjected to such tests.

Suggested Readings

For a very good discussion on words as lexical categories rather than parts of speech, see (Valin, 2004; Spencer, 1991; McCarthy, 2002). Miller (2002) has thoroughly discussed the tests for phrases. Schachter (1985) provides a thorough discussion on parts of speech. A very good account on English words and their classification has been provided in (Harley, 2006; Katamba, 2004).

Ouhalla (1999) has provided a good deal on ***Constituency Criteria*** but this is more advanced. You can also look at Ibn Aqeel (1997) for coordination in Arabic. For a short note on clefts in English, see Miller (2002). For a good deal on Arabic phrases and clefts, see Fassi Fehri (1993). A good discussion on English phrases and clefts has been provided in (Radford, 1997, 2004, 2009; Roberts, 1997).

Exercises

1. Pinpointing the different positions it can occur in, try to apply the tests for phrases to the Arabic PP ***fi l-bait-i*** **in:**

ra?i-tu	***?ahmad-an***	***fi l-bait-i***
saw-I	**Ahmed**	**in the-house**

'I saw Ahmed in the house.'

2. Identify the types of *phrases* and *clefts* in the following excerpt

"Linguistics in general is a changing field of study. What has been stated one day about a linguistic phenomenon changes the other day and nothing remains stable. One of these changes we find is that concerning words, their nature and their classification. In this Chapter, a modern and contemporary view to word and word classification has been adopted and adapted. Thus, a word has been looked at as a lexical category rather than a part of speech."

3. Sometimes, tests for phrases are optional but some other times they are a must. ***Prove this statement true providing examples in support of you answer from both English and Arabic***.

4. Substituting pronouns for NPs is to some extent error-free in English and Arabic syntax in whatever position. However substitution in the case of APs, AdvPs or VPs is error-provoking. ***Prove this statement true providing examples in support of your answer from English and Arabic***.

5. Identify the type of phrase test in the following:

(i) *In the morning, I will meet you.*

(ii) *This student is very hardworking and if you are so, you will pass the exam.*

(iii) *Where are you staying?*

(iv) *Ali submitted his assignment and got high marks.*

(v) *Which syntax book have you studied?*

(vi) *Ali liked syntax but Alia like semantics.*

(vii) *I have a book and a pen.*

(viii) *Ali passed syntax exam but Alia didn't.*

(ix) *Ali has found a job in the city but he hasn't joined yet.*

(x) *It was Ali who got the topper and you are still what you are.*

3 Clauses and Sentences

3.1. The Nature of Clause

In our discussion in Chapters 2 and 3, the terms "clause" and "sentence" have been used thoroughly but without specifying or verifying what each is. As has been stated earlier, there are some differences between a word and a phrase the most important of which, as far as syntax is concerned, is that a phrase is a string of two or more words. Sometimes, as discussed also above, a word for many reasons can be said to be a phrase making the concept of phrase larger to even include a word. This is actually not our concern here. What concerns us here is that we have to state a very essential and unique difference between a word and a phrase which is that ***every word can be a phrase but not every phrase can be a word***. For instance, *book* is both a word and a phrase but *the book* is a phrase and never a word.

The reason why I begin this Chapter with such a review of words and phrases is that if you have acquired and comprehended both constituents, it is easy for you to understand *clause and sentence* for the fact that it is words and phrases which constitute both the clause and the sentence. Now, remember that when we defined the term *phrase*, we referred to verb and tense and we said that *a string of words having no (un)tensed verb* is a phrase (actually with some kind of caution (see Footnote 11)).

If our argument in the above paragraph is true, it follows that if a string of words has a verb and that this verb has a tense or not, such ***a string of words is called a clause*** so far so good. However, does this mean that a clause with a tensed verb is the same like a clause having an untensed verb? In principle, there must be a difference! In fact, a difference between both *does* exist. Thus, if a clause has a tense, it is called finite and if, however, it has an untensed verb, it is called a nonfinite clause. Thus, clauses in English and I believe in Arabic, too, are divided into the following types: finite and

nonfinite, main and subordinate, adverbial and complement and relative clauses. We will discuss such types one by one in the following sections.

3.2. Finite and Nonfinite

In our above discussion, we come up with the idea that what distinguishes a phrase from a clause is that a clause has a verb whether tensed or untensed. Thus, crucial to the concepts "finite" and "nonfinite" is whether the verb of a clause has a tense or not, respectively. If it is the former, it is finite and if it is the latter, it is nonfinite. Let's start with finite clauses. Now, the question to be addressed here is that is tense alone what distinguishes a finite clause from a nonfinite one? In other words, is there any other difference between a finite clause and a nonfinite one? Before answering this question, consider (1a-d) below.

(1a) *Ali goes home early.*
(1b) *For Ali to go home early is good.*
(1c) *For them to go home early is good.*
(1d) *For you to go home early is good.*

In (1a), the verb *goes*, which is finite, is marked for tense, namely, *present simple* with the suffix ***-es***. However, this suffix does not merely mark tense but also person and number in English. In addition to marking the present simple tense, it marks 3rd person and singular number. In (1b, c & d), however, the verb *go* is not marked for any of these grammatical features. Now, comparing (1a) to (1b,c&d), what you are supposed to come up with is that *a finite verb is marked for tense, person, number and gender but nonfinite one is not* and hence, the answer to the question addressed above.

In fact, it is true that finite verbs are not marked for gender "overtly" in English but in other languages like Arabic, for instance, they are marked for gender in addition to all other features. It may also be argued that finite verbs in English may be marked for gender "covertly." *Covertly* in the sense that we cannot see such marking as far as Modern English is concerned because in Old English, gender was marked overtly. Thus, being finite, the verb of a finite clause is marked for tense, person, gender and number. In "generative" terminology, the terms (person, gender and number) are called ***ϕ-features.***

What is meant by the term "tense" is that grammatical category which indicates that what has been said and/or written is either set to be in past, present or future. In

addition to tense, there is a factor called *aspect* such as progressive, perfective, imperfective a finite verb has to be marked for. For instance, the verb ***write*** is marked for past progressive as in *was writing* in *He was writing a book*, present progressive as in *is writing* in *He is writing a book,* perfective as in *has written* in *He has written a book*, imperfective as in *writes* in *He writes a book,* and *wrote* in *He wrote a book*.

Moreover, person in English has three forms. These are first, second and third. In English, these are best represented in the personal pronouns. *He, she* and *it* are third person singular forms, *they* is a third person plural form, *I* is a first person singular form, *we* is a first person plural and *you* is both second person singular and plural. Gender is represented only in *he* and *she*. The former is masculine and the latter is feminine.

English is considered very poor in inflections, those morphological markers (usually suffixes) put to indicate Case, person, number and gender. However, languages like Arabic are very rich in such a system. For number, English has to numbers, viz. singular and plural. However, Arabic has three, i.e. singular, dual and plural. As far as verbs are concerned, English verbs are marked only for third person number in present tense either singular or plural. In the former, *-es/-s* is added to singular verbs as in *He give**s** me a book* and we do not add this suffix in plural as in *they give me a book*. In fact, English almost lack such markers (inflections) either on nouns or verbs. However, there is an exception to this which is with the verb ***be*** in its different forms (am, is, are--was, were) for present and past tenses, respectively and (being-been) for aspect, progressive and perfective respectively (see Chapter 6, section **6.3.6**). Again, Arabic has a very rich inflectional system on both verbs and nouns. For instance, the triliteral root ***KTB*** has the following chart for all ϕ-features.

Table (1): Φ-features Appearing on the Verb *katab*

1st person		2nd person					3rd person				
Num / s.	pl.	s.f	s.m	dual	pl.f	pl.m	s.f	s.m	dual	pl.f	pl.m
katab-tu	katab-naa	katab-ti	katab-ta	katab-tuma	katab-tunna	katab-tum	katab-at	katab-a	katab-aa	katab-nna	katab-u

In Table (1), the Arabic past-tensed verb ***katab*** is marked for all ϕ-features (person, number and gender) where number includes singular, dual and plural. Person includes 1st, 2nd and 3rd. gender includes masculine and feminine.

In short, this type of clauses, viz. finite, is divided into two types, namely, *main, subordinate* (see section **3.3.** below) on the basis of the fact that in each of these two types, the verb is finite.

On the other hand, non-finite clauses, as the name suggests have non-finite verbs, and as we know, what is meant by a non-finite verb is that the verb is not marked for tense and ϕ-features (see (1a-d) above). English and I believe almost all languages have such verbs. All in all, nonfinite verbs are divided into three types based on the verb constituting each, viz. *–ing* form, *to-infinitival*, i.e. to+ v_0 and *infinitival without to* (best represented with verbs like ***make*** and ***let*** as in *Coffee makes me focus more* and *She let me go early*, respectively). However, we will not discuss the third type because it comes only with certain verbs. Now, consider the examples in (2a) and (2b) illustrating the former two types of nonfinite clauses.

(2a) *Playing kites is dangerous.*

(2b) *To play kites is dangerous.*

(2a) represents a nonfinite clause, i.e. *playing kites* having a nonfinite verb, viz. *playing* but in *–ing* form. However, (2b) shows a nonfinite clause, i.e. *to play kites* having a nonfinite verb, i.e. *to play* but in *to-infinitival* form. As can be seen in (2a) and (2b), the nonfinite clauses function as subjects in both. In fact, nonfinite clauses can function as any noun (more on this in Chapter 5).

3.3. Main and Subordinate Clauses

A main clause, as the name suggests, indicates that it is very essential in the sentence. As has been stated above, main clauses have finite verbs. There are properties distinguishing them from other types of clauses. The following are the most notable properties main clauses have and hence, distinguishing them from other types of clauses.

1. Main clauses have finite verbs.
2. Verbs in main clauses always have subjects. They may, however, have complements (objects) or adjuncts (see Chapter 5).
3. Their verbs are also marked for *aspect* (see section **3.2.** above) and *mood* which simply means that whether the clause expresses statement, question, request, order etc. (see section **3.7.2.**).
4. They can be undergone tests for phrases (see Chapter 2).
5. They can stand alone.
6. They constitute the essential materials for syntactic analysis.

On the other hands, subordinate clauses are clauses that have almost all the properties of main clauses. They, however, differ from main clauses in that they *cannot stand alone*. Now, consider the examples given in (3a&b) which illustrate the point in question.

(3a) *The students have done their homework.*
(3b) **If you study hard,*

(3a) represents a main clause which has all the properties presented in 1-6 above However, looking closely at (3b), we come to know what is meant by subordinate clause. In fact, a subordinate clause as the name suggests needs another clause, i.e. main clause, to complete the meaning it expresses. This is clear from the ungrammaticality of (3b). Thus, for (3b) to be grammatical, it needs to be in the form of (3c) where the main clause, i.e. *you will pass the exam* is used.

(3c) *If you study hard, you will pass the exam.*

Now, what is crucial to subordinate clauses is the fact that they cannot stand alone *which is what distinguishes them from main clauses*. However, it is still unclear, i.e. we need to know what constitutes a subordinate clause. The answer to this question is that each clause starting with a subordinate word like *if, when, as soon as, though, after, before, although, whereas, while* among many others is said to be a subordinate clause.

3.4. Relative clauses

Relative clauses are those which are introduced by relative pronouns such as ***who, whom, which, that, whose*** and ***where***. It is worth pointing out here that the relative pronoun ***whom*** in relative clauses such as *This is the person whom I respect* was traditionally used to modify an NP functioning as an object. This relative pronoun is rarely used in modern syntax. ***Who*** instead is used to introduce subject and object relative clauses. Such a type of clauses are said to function as adjectival modifiers. In that, they modify an NP in the same way an adjective does. However, there is some kind of difference between both. An adjective can modify an NP occurring in either prenominal or postnominal positions. In other words, an adjective can occur either before or after the noun it modifies. However, relative clauses always postmodify NPs. Now, consider (4a&b) and (5a-c) which illustrate this issue.

(4a) *The present man in the party was Sir Thomas Shield*

(4b) *The man present in the party was Sir Thomas Shield.*

(5a) *The man who was present in the party was Sir Thomas Shield*

(5b) *The book which was written by Fassi Fehri was about Arabic syntax*

(5c) **The who was present man in the party was Sir Thomas Shield*

In (4a), the adjective *present* occupies the prenominal position modifying the noun *man*. In (4b), however, it occupies the postnominal position and modifying also the noun *man* (though some linguists e.g. (Pysz, 2006), consider structures like (4b) where the adjective *present* is used postnominally ***reduced relative clauses***). In (5a&b), the relative clauses *who was present* and *which was written by Fassi Fehri* occupy the posnominal positions of the nouns *man* and *book* modifying them, respectively. The ungrammaticality of the (5c) lies in the fact that the relative clause *who was present* occurs in the prenominal position of the noun *man*.

In fact, why such clauses are called "relative" dates back to Latin linguists who refer to Latin pronouns such as *qui, quae, quod* (who, that, which, respectively) relative pronouns because such pronouns describe nouns (Miller, 2002). This fact is reflected in the term "pronoun" where the prefix *pro-* means ***for*** and the noun *noun*. In modern English syntax, relative pronouns do not show or are not marked for ***number, person*** and ***gender***. However, they are marked for ***Case***. In that, the relative pronouns ***who,*** (***whom***) and ***whose*** are marked for Nom, Acc, Gen Cases, respectively.[15] As has been stated earlier, the relative pronoun ***whom*** is rarely used in modern English syntax, however. Moreover, there is some kind of +/- human difference which appears vividly on the use of *who/which* where *who* is used for +human and *which* for –human.

On the other hand, if we consider relative clauses in languages like Arabic, the issue is different. In Arabic, relative pronouns are marked for *number, gender* and *Case* but not for *person*. Now, consider Table (2) presenting Arabic relative pronouns.

Table (2): Arabic Relative Pronoun Marking for Person, Number and Case

Number / ***Gender***	**Singular**	**Dual**	**plural**
Masculine	***?allaði*** ***maa(n)***	***?allaðaani-Nom*** ***?allaðaini-Acc, Gen***	***?allaðiina***
Feminine	***?allati***	***?allataani-Nom*** ***?allataini-Acc,Gen***	***?allaati***

[15] The terms ***Nom, Acc, Gen*** refer to ***Nominative, Accusative*** and ***Genitive*** Cases, respectively

In Table (2) above, it is only dual relative pronouns which are marked for Case while singular and plural are not. Another feature of Arabic relative pronouns is that there is no what is called +/- human difference. In that, they each can be used for +human and –human entities. Again, looking at Table (2) above, one is likely to observe the difference between Arabic and English relative pronouns. In English, for instance, the relative pronouns ***who, whom*** and ***whose*** are the only marked relative pronouns for ***Case*** and not for any other φ-feature and this actually creates a great difficulty for Arab learners learning English though they are simpler than Arabic ones. In addition, an equivalent relative pronoun of ***whose*** does not exist in Arabic at all. Further, the Arabic relative clause *haða ?al?ustað-a ?allaði ?uħib-u* (this is the teacher who I love) has another grammatical counterpart, i.e. *haða ?al?ustað-a ?allaði ?uħib-u-**hu*** where the resumptive cliticized pronoun ***–hu*** is attached to the verb causing a considerable difficulty for even very advanced Arab learners including MA and Ph.D holders. This is so due to the fact that the addition of this resumptive relative pronoun results in English relative clauses as in *this is the man who I love him* where *him* renders the whole sentence ungrammatical (be careful!!!). In generative syntax, it is said that Arabic allows resumptive pronouns while English does not. Something more about the Arabic relative pronoun *?allaði* (who/which) is that it is not marked for person but marked for Case abstractly. In other words, the same form, *?allaði* is used for 1st, 2nd and 3rd person and for Nom, Acc and Gen Cases.

3.5. Adverbial Clauses

Those clauses that express reason, result, condition, time and manner are called adverbial clauses. As has been stated earlier, one property of adverbs is that they modify verbs and hence, adverbial clauses actually modify the state of action expressed by the verbs in other clauses and hence, they can modify other clauses. Now, consider the examples in (6a-e) below which illustrate the point in question.

(6a) *I went to the doctor because I felt ill.*

(6b) *She was late for class so the teacher was angry.*

(6c) *If you love syntax, you will find this book interesting.*

(6d) *When class started, Sir didn't allow us to enter.*

(6e) *This man built his house as I told him*

Adverbial clauses in (6a) through (6e), viz. *because I felt ill, so the teacher was angry, if you love syntax, when class started* and *as I told him* represent and clarify reason,

result, condition, time and manner, respectively. There are some facts one can get from these examples about adverbial clauses. First, they are subordinate clauses, which means that they are adjuncts (i.e. optional, see adjuncts in Chapter 6). Second, they add extra information about the main clauses viz. *I went to the doctor, She was late for class, you will find this book interesting, Sir didn't allow us to enter* and *This man built his house*. These pieces of information reflect reason, result, condition, time and manner, respectively which make the main clauses clearer and the ideas expressed more obvious. Third, they can be put either before the main clause as in the case of (6c&d) or after it as in the case of the rest of the examples in (6) above. Fourth, in terms of generative syntax, they are called embedded clauses. In that, they appear within main clauses especially those occurring after main clauses.

3.6. Complement Clauses

As the name indicates, complement clauses function as complements of verbs, prepositions, prepositional partners, nouns and adjectives. Traditional linguists used to refer to them as noun clauses or adnominal clauses. Why they call them as such is because they function like what nouns do. Consider the examples given in (7a-f) which exemplify such functions one by one.

(7a) *I know* ***where you put your books***

(7b) *Only sixty percent of* ***what you said*** *is correct.*

(7c) *I am proud of* ***what you have done.***

(7d) *I want* ***to know more about syntax***

(7e) *The idea* ***that syntax is easy*** *surprises me.*

(7f) It is easy **to please her**.[16]

Examples of complement clauses given in (7a-f) illustrate the different positions such clauses can occur in. However, a cursory look at such clauses gives us a clue that they are of different types of clauses. In (7a), for instance, it is a relative clause, in (7b), it is a nominal clause, in (7c), it is also a nominal clause, in (7d), it is a *to-infinitival* nonfinite clause, in (7e), it is a *that*-clause, in (7f), it is a *to-infinitival* nonfinite clause. They are called complement clauses for the fact that they occupy the complement positions of different lexical categories. In (7a), the complement clause ***where you put your books***

[16] See, for example, (Chomsky, 1981; Sadler & Arnold 1994; Abney, 1977; Pysz, 2006; Larson & Marušič, 2004).

is the complement of the verb ***knows***. In (7b), the complement clause ***what you said*** is the complement of the preposition ***of.*** In (7c), the complement clause *what* ***you have done*** is the complement of the preposition partner ***proud of***. In (7d), the complement clause ***to know more about syntax*** is the complement of the verb ***want***. In (7e), the complement clause ***that syntax is easy*** is the complement of the noun ***idea***. In (7e), the complement clause ***to please her*** is the complement of the adjective ***easy***. In generative syntax, the term "complement clause" reflects some kind of relation between a head and its complement (see Chapter 6&8). Thus, some properties of complement clauses can be drawn from the above discussion. These are as follows:

i. A complement clause can be of any type of clauses discussed above, viz. a relative clause as in (7a), a non-finite clause as in (7d), a nominal clause as in (7c), etc.

ii. Complement clauses function as complements of verbs, prepositions, preposition partners, nouns or adjectives.

iii. An adverbial clause functioning as a complement of verbs still expresses adverbiality as if it is in the case of non-complement uses.

iv. *That*-complement clauses can occur to the left of the verb as in (8) below:

(8) *That syntax is not difficult surprises me.*

Thus, the above discussion is of some sort of confusion for the fact that a clause of any type can function as a complement or a modifier, be it subordinate, non-finite, etc., the question is how to identify or exactly know that a given clause is such-and-such. A plausible answer to this question will be clear after considering the below rules:

a. If any given clause modifies a state of action expressed by the verb of another clause, it is an ***adverbial clause.***

b. If, however, any given clause complements a verb, preposition, a noun, as in (7a-e**),** it is a ***complement clause***.

These two rules are exemplified in (9a&b) below where the clause ***when you came*** is adverbial clause in (9a) but a complement clause in (9b).

(9a) *I was there* ***when you came.***

(9b) *I know* ***when you came.***

c. If any given clause modifies a noun, it is a relative clause.

d. If it complements a noun it is a complement clause

These two rules are exemplified in (10a&b) below where (10a) is a relative clause and (10b) is a complement clause.

(10a) *I like the student who comes to class on time.*

(10b) *I like who comes to class on time.*

e. if a clause introduces a subject of a verb as in (11a), it is a complement and if it introduces an object as in (11b), it is a relative clause.

(11a)*The suggestion that Ali should come early is good.*

(11b)*The suggestion that Ali made is good.*

If you want to be clear about which of these two relative clauses introduces a subject and which introduces an object, look at the type of the verb involved. In other words, a complement clause seems to include an intransitive verb and a relative one seems to involve a transitive verb. We all know that intransitive verbs do not require complements as in the case of (11a) where *come* is an intransitive verb which has no complement in that example. However, if you consider the verb *made* which is a transitive verb, i.e. it has to have a complement; there is no complement to this verb. Have you thought where it is? In fact, if you look closely at (11b), you will find that it is the NP ***the suggestion*** which is the complement of the verb *made*. In this case, the clause *that Ali made is good* introduces an object and hence, it is a relative clause. However, the clause in (11a), viz. *that Ali should come early is good* introduces a subject *the suggestion* simple because the verb *come* is intransitive and hence, the subject *the suggestion* is related to the verb *is* and not *come*. In addition, you can also apply *that-which replacement*. In (11a) *which* cannot replace *that* but in (11b) it can (see (**f**)) below.

f. If *that* cannot be replaced by *which*, the clause is complement. This is shown in (12a&b)

(12a) *I admire the idea that Ali is a good person.*
(12b) **I admire the idea which Ali is a good person.*

The ungrammaticality of (12b) lies in the fact that *that* in (12a) has been replaced by *which* in (12b). To sum up this section, it is worth mentioning that a complement clause can be of any type discussed above provided that it has to occupy a complement position, be it of a verb, a preposition, a noun, etc.

3.7. Sentences

As has been stated earlier, sometimes a finite clause can be a sentence but what is a sentence? In fact, there are several definitions for a sentence. However, the best definitions provided for a sentence are those from syntactic and semantic perspectives. Thus, from a syntactic perspective, a sentence can be defined as a string of words having *at least* a subject and a tensed verb as in *Ali laughed* where the minimum requirements, i.e. the subject *Ali* and the tensed verb *laughed* are present. However, from a semantic perspective, a sentence is a piece of language that is complete in itself, conveying a statement, question, exclamation, or command and typically containing a subject and a predicate.

As far as the above definitions are concerned and since such definitions are based on the two most adequate criteria, viz. syntax and semantics, it is worth taking these two criteria to investigate English sentences and their types.

3.7.1. Syntax Criteria

This type of criteria has to do with the structure of the sentence, i.e., syntactic structure. Thus, considering syntax as the criterion, we are likely to find that there are three types of sentences. These are briefly discussed and exemplified as follows:

3.7.1.1. Simple Sentences

A simple sentence can be simply defined as one which contains at most a subject and a tensed verb. This definition excludes untensed verbs to be part of simple sentences. This is actually something similar to that of main clauses. In fact, the verb in a simple sentence can have object(s) and one or more modifiers. Consider the examples in (13a-c) which illustrate this issue.

(13a) *The boy laughed.*

(13b) *Ali and Ahmed read Holy Qur'an.*

(13c) *The so very good teacher of English does his job very properly.*

In (13a), the subject is a single NP *the boy* and the verb is *laughed*. In (13b), the subject is a compound NP, viz. *Ali and Ahmed* the verb is *read* and the object is the NP *Holy*

Qur'an. In (13c), the subject is a long NP *The so very good teacher of English,* the verb is *does,* the object is the NP *his job* and the AdvP is *very properly.* In fact, a simple sentence can also be much more complex than those in (13a-c) above. Now, consider the simple sentence in (14a).

(14a) *He gave her a book.*

Consider the types of complements of simple sentences in (14a), the subject is a single NP *He* and the verb *gave* has two NPs as objects, viz. *her* and *a book*. If our definition of the simple sentence above is true, it follows that sentences with one tensed verb and another with untensed verb is not considered a simple sentence like (14b).

(14b) *She wants to understand syntax.*

In (14b), there is a sentence having a subject *She,* a verb *wants* and an object but this object is a clause, viz. *to understand syntax* which is a *to-infinitival* nonfinite clause. The reason why (14b) is not a simple sentence though having at most one tensed verb, namely, *wants* is that there is an embedded clause, viz. *to understand syntax* which rules it out as being simple.

3.7.1.2. Compound Sentences

As the name suggests, a compound sentence encompasses two sentences but what is their nature? In fact, a compound sentence consists of two main clauses joined by a coordinator. The common English coordinators are: *and, but, or, yet,* etc. Now, consider the examples in (15a&b) below.

(15a) *Ali studies English* ***and*** *Ahmed studies French*

(15b) *Ali will recite Hadiths* ***but*** *Fatma will recite Holy Qura'n.*

(15a) and (15b) contain two main clauses each. In (15a), the two main clauses are *Ali studies English* and *Ahmed studies* French. These two clauses are coordinated by ***and***. In (15b), the two main clauses are *Ali will recite Hadiths* and *Fatma will recite Holy Qura'n* which are joined by ***but***.

3.7.1. 3. Complex Sentences

A complex sentence has a main clause and a subordinate clause joined by a subordinator such as *since, after, although, when,* etc. or a relative pronoun such as *that, who,* or *which*. Now, consider the following examples:

(16a) ***When I met you for the first time****, I was happy.*

(16b) ***The teacher asked us many questions*** *after she came in.*

(16c) ***Although I attended today's class****, the teacher did not ask me any question.*

In (16a-c), the subordinate clauses are marked as *italicized* and **bolded** and the main clauses only *italicized*. There is a specific method for writing complex sentences. In that, if the complex sentence begins with a subordinate clause as presented in (16a) and (16c), a comma is *a must* at the end of the subordinate clause. However, if the subordinate clause comes after the main clause as in (16b), no comma is required.

3.7.2. Semantic Criteria

As the name suggests, this type of criteria has to do with meaning. Thus, taking meaning as a criterion, sentences can be divided into four types, namely, *declarative, interrogative, imperative* and *exclamative.* Each of these types functions based on the meaning each conveys. However, from a syntactic point of view, these sentences can have any structure, viz. simple, compound and/or complex like those in (section **3.7.1**.) In that, at least a subject and a verb must be present. However, they may differ in what they convey because each of these types conveys a specific meaning. These types are discussed as follows:

3.7.2.1. Declarative sentences

A declarative sentence is one which expresses statement, i.e. not interrogative, not imperative and not exclamative. This type is exemplified in (17) below.

(17) *Our teacher asked us many questions.*

Some linguists (e.g. Saeed, 2003; Kreidler, 2002) explain such sentences in terms of truth values, i.e. the meaning conveyed by them is either ***True*** or ***False***. These sentences only declare information the truth or falsity of which depends on several factors such as context, time, place, etc.

3.7.2.2. Interrogative sentences

An interrogative sentence is one which asks a question. This type is divided into two subtypes, viz. ***Yes/No questions*** and ***Wh-questions*** as illustrated in (18a&b).

(18a) *Do you study English?*

(18b) *What do you study?*

As can be seen in (18a&b), the former begins with the auxiliary verb ***Do*** to make a ***Yes/No question*** and the latter with the Wh-word ***What*** so as to form a ***Wh-question***. Both questions are set to seek information as an answer. On the other hand, interrogative sentences differ from declarative ones in that the syntax of the former requires ***subject-auxiliary inversion*** as noticed in ***Do you....?*** in (18a) while that of the latter does not.

3.7.2.3. Imperative sentences

An imperative sentence is one which is said to express a request, command, etc. As far as syntax is concerned, this type of sentences apparently lack subject. However, the subject is always understood as "you." This type is exemplified in (19a&b) below.

(19a) *Open the window.*

(19b) *Fire!*

In (19a), the imperative sentence *Open the window* expresses a request. In fact, sometimes, imperative sentences especially those expressing request co-occur with the word *please* as in *Please, open the window.* In (19b), there is an imperative sentence though expressed in one word, i.e. the verb *Fire!* This sort of imperative sentences expresses a command usually said by a senior person to a junior one. In other words, the first sentence, i.e. (19a) can be said by anyone requesting another one to *open a window* while the sentence in (19b) is said by an army commander commanding his/her soldiers. As has been stated above, (19a&b) are called sentences though there is no subject. We said that the subject is always an implied "you" because in English and many other languages like Arabic and Hindi the subject of an imperative sentence is not allowed. Now, consider (20) from Arabic.

(20) *?iftaħi* *l-baba-a*
open the-door

'Open the door.'

In (20), the Arabic imperative sentence consisting of the imperative verb *?iftaħ-i* (open) and the object *l-baaba-a* (the-door) has no subject in the sense discussed above. Even in Arabic, the understood subject is *?anta* (you). The same thing can be said of Hindi. Now, consider the Hindi imperative sentence presented in (21) below:

(21) *Daravājā* *khulā*
door open
'Open the door.'

where the implied subject is *aap/ tum* (you). *aap* is an honorific form of *tum* (you).[17]

3.7.2.4. Exclamative sentences

An exclamative sentence in English expresses exclamation. It is initiated with the Wh-word *what* or *how*. Consider (22) below.

(22) *What a beautiful house (you have/this is)!*

What has been bracketed, i.e. *you have/this is* means that it is optional. *Optional* in the sense that we can state it or not. Even if it is not stated, it is still a complete sentence because it is implied. In fact, exclamative sentences are mostly used in spoken language. Here, the use of the wh-word, i.e. *what* or *how* is not meant for question-asking but for expressing a surprise!

Summary

What distinguishes a clause from a phrase is that it has a verb either finite or nonfinite. A finite clause is one which has a verb and this verb is tensed. A nonfinite clause, on the other hand, is one which has a verb but this verb is untensed. Based on their finiteness, clauses can be classified into main, subordinate, relative, adverbial and complement. From nonfiniteness perspective, clauses are divided into *to-infinitival* nonfinite and *–ing form* nonfinite and even infinitival without *to.* Each class functions differently from the others but each of these types can function as a complement clause. This is so due to the fact that for a clause to function as a complement, it has to occupy a complement position, be it of a verb, preposition, noun, etc. On the other hand, a sentence is something similar to a clause in that both of them must have verbs.

[17] See, for instance, (Bhat, 2012)

However, the difference between a sentence and a clause is that while the former has to have a tensed verb and a subject, the latter does not have to. There are two criteria for classifying sentences, viz. syntactic and semantic. Based on the former, sentences are classified into three subtypes, namely, *simple, compound and complex*. From a semantic or functional perspective, sentences are divided into four types, viz. *declarative, interrogative, imperative* and *exclamative.*

Suggested Readings

Quirk (1985) has discussed different kinds of clauses thoroughly. In addition, Miller (2002) has discussed and exemplified different kinds of clauses, particularly in Chapter 6. For a short note on clefts in English, see Miller (2002). For a good deal on Arabic phrases, clauses and sentences see Fassi Fehri (1993). For a good discussion on English clauses and sentences, see (Radford, 1997, 2004, 2009; Roberts, 1997).

Exercises

1. Identify the type of clause and the function it does in each of the following sentences:

(i) *To study hard is to make your life better.*

(ii) *I want to know who comes early to class.*

(iii) The idea that English students *should study syntax well makes who studies syntax this year do their best in what they are doing.*

(iv) *I love who loves syntax.*

(v) *What makes me happy is to see my students get good opportunities in their future careers.*

(vi) *I wonder if you could understand this Chapter.*

(vii) *Everyone loving Yemen has to study day and night to serve <u>her</u> the way he/she believes appropriate.*

(viii) *If you get interested in what you are doing, success will be your host.*

(ix) *I do not know where I will meet her.*

(x) *Who gives me what I want gives those who work hard what they want to firmly face what others think that it is in what they have lies their failure.*

2. It has been stated somewhere above that sentence types classified according to semantic criteria include all those encompassed by syntactic criteria. ***Prove this statement true providing examples from English and Arabic.***

3. A clause of any type can function as a complement. **Prove this statement true for all types of clauses functioning as complements for Vs, Ps, Ns, As**.

4. Identify the type of the Arabic clause and the function it does in each of the following:

(i) *ʕaraf-tu ma turiid-u*

(ii) *"maa ?aataakum-u r-rasuul-u faxuðuu-hu"* (***Qura'n***)

(iii) *?ar-rajul-u ?allaði jaa?-a ?ams-i*

(iv) *laa ?ilaah-a ?illa man sakan-a l-ʕarš-a*

(v) *?iða ?arad-ta ?an ta?kul-a ma wahabtu-ka*

5. There is at least a difference between any pair of clauses you pick up randomly. Take the complement clause of all types and contrast it with an adverbial one bringing out their differences and similarities.

4 Grammatical Relations

4.1. Grammatical Relations

Grammatical relations are those which are concerned with the relations among words in a piece of language, be it a phrase, a clause or a sentence. In fact, grammatical relations are also called ***dependency relations***. Such relations are manifested syntactically among words in phrases, phrases in clauses and clauses in sentences. These grammatical relations are said to be several. However, we will limit our discussion to the most important of such relations, viz. *word order, agreement* and *Case Marking*. These will be investigated, examined and discussed in this Chapter supported with examples from different languages.

4.2. Word Order

In syntax, we concern ourselves with how words are structured into phrases, phrases into clauses and clauses into sentences. Now, to repeat a question stated earlier, is that enough to understand how language works at the level of syntax? In other words, is it simply that we group words, any words, and put or arrange them into phrases, clauses and/or sentences, or are there further relations among such constituents? In fact, the answer to this question will be the main concern of this Chapter. Now, let's take an English example in (1) and see how things work.

(1) **Writing was teacher the book a*

Now, the question we should address here is that why is (1) ungrammatical in English? The answer to this question lies in the fact that (1) is ungrammatical because it violates word order rules of English. The word order violated in (1) concerns several levels. First, the phrase level where an article must precede a noun. This English rule is violated in ***teacher the*** which has to be ***the teacher*** and ***book a*** which has to be ***a book***.

Another phrase level according to English is that the auxiliary must precede the main verb but not the other way around as presented in (1), i.e. ***writing was*** which has to be ***was writing***. Second, there is a word order violation in sentence level. In English, a sentence has to be ordered as *subject+ verb +object*, i.e. English is an SVO language.

Now, for (1) to be grammatical, it has to be *The teacher was writing a book* where the subject *The teacher* is followed by the verb *was writing* which is in turn followed by the object *a book* and hence, representing an SVO English word order. In fact, (1) above shows how some languages, English for instance, work at the level of word order in simple phrases, i.e. consisting of an article and a noun where articles precede nouns, and simple sentences consisting of subject, verb and object pertaining to SVO word order.

Thus, word order is a grammatical relation which can be simply defined as the way words have to be ordered in a particular language, for instance, English in our case. Again as far as English is concerned, we shall make sure that the subject is positioned before its verb. However, what about the order of verbs and their objects for the fact that there are different types of verbs in English? *Different* in the sense that there are verbs in English that require more than one NP as complements. Moreover, there are those verbs which require NP and PP and there are those which need a whole clause as an object, etc. Thus, with verbs requiring more than one complement, these complements have to be ordered in a particular way; otherwise, the sentence will be ungrammatical. Consider the examples in (2a-d) which illustrate the issue in question.

(2a) *Ali gave Alia a book.*

(2b) *Ali put the book on the table.*

(2c) *Ali thought that syntax is easy.*

(2d) *Alia made Ali a doctor.*

In (2a), there are two NPs as objects, namely, *Alia* and *a book*. This is due to the fact that the verb *gave* is ditransitive requiring two NPs as objects and they have to be in that order. In (2b), there are two phrases functioning as objects but they are not both NPs, i.e. an NP *the book* and a PP *on the table* because the verb *put* requires an NP and a PP as its complements, and again, they have to be in that order. In (2c), there is a *that*-clause, i.e. *that syntax is easy* functioning as a complement of the verb *thought* due to the fact that the verb *think* requires a clause as an object. In (2d), there is a different relation between *the* verb *made* and its two object NPs, viz. *Ali* and *a doctor*. In that *Ali* is a direct object but *a doctor* is not indirect or a second object, it is rather an object complement necessitated by the verb *made* in such a context.

This actually puts us vis-à-vis a complicated phenomenon. This is so because the grammatical relation between a verb and its object(s) depends on the nature and type of the verb in question. The grammatical relations existing among the verb and its object(s) in (2a-d) are an indirect object and a direct object, direct object and location, a direct object (a complement clause) and a direct object and an object complement, respectively, and they have to be in that word order. Thus, to understand the grammatical relation between a verb and its object(s), we have to bear in mind two sets of concepts, viz. the first is the set of grammatical relations, that is, subject, direct object, indirect object/second object, and the second is the set of ***Thematic*** (semantic) ***Roles*** such as ***Agent, Actor, Affected***, etc. Though the first set is the concern of syntax and the second is the concern of semantics and since our main concern in this book is syntax, we will just try to shed some light on the second set in subsequent sections.

Suffice here to concern ourselves with grammatical relations and how they work in languages. Before doing so, we need to pinpoint a very important aspect in understanding the nature and concepts of such grammatical relation terms like *subject* and *object* in traditional grammar and how they are handled in modern and contemporary linguistics. In fact, traditional linguists used to define the subject as that entity which performs the action represented by the verb. Now, let's consider (3a&b) below.

(3a) *Ali broke the window*

(3b) *The window broke.*

Now, if the traditional definition of the subject is alright in (3a) where the NP *Ali* is the subject, what about the subject in (3b)? In (3b), *the window* is a subject but it does not perform the action stated by the verb *broke* for how it is that ***the window broke itself***! In fact, the term subject was defined based on meaning (semantics). However, as it is argued, this definition fails! For this reason, a subject has to be redefined. Thus, I assume that a working definition should be based on syntax. Thus, a subject can be defined as ***the piece of language which occupies the subject position in a clause or a sentence***.

On the other hand, an object is traditionally defined as the entity which receives the action stated by the verb. Let's examine this definition by considering (4a-c) below.

(4a) *Ali hit Ahmed.*
(4b) *My mother has baked a pie.*

(4c) *Ali likes syntax*

Now, is the traditional definition of object satisfactory in (4a-c)? Absolutely not! It might be *ok* in (4a) where *Ahmed* receives Ali's ***hitting*** but it is absolutely not in (4b&c). In (4b), *pie* does not receive *My mother's* ***baking*** but it is itself a result of ***baking***. Nor does it apply to (4c) simply because *syntax* is not affected but affecting and the affected is *Ali* by the verb *likes*. Therefore, I assume here that a working definition has to be based on syntax. Thus, an object is ***the piece of language which occupies the object position in a clause or a sentence***. Definitions of subjects and objects based on syntax are merited for the fact that syntax solves the confusion created by defining them merely in terms of meaning (semantics).

As far as word order is concerned, languages are not the same. In that, what can be alright in English, it may not be so in Arabic or Hindi. Let's examine (5) and (6) which exemplify word order in terms of phrases in Arabic and Hindi.

Arabic:

(5) *?al-walad-u* *l-jaid-u*
The-boy the-good

'The good boy.'

Hindi:

(6) *Ēka* *acchā* *laṛkā*
one good boy

'A good boy.'

As far as phrase word order is concerned, it seems that English word order works well for Hindi NPs as can be seen in the English gloss of (6). However, it does not work for Arabic. Comparing the Arabic NP *?alwalad-u l-jaid-u* to the English gloss, there are two facts to be noticed. First, the Arabic adjective *l-jaid-u* (the good) is postmodifying the NP *?alwalad-u* which is completely opposite to that of English.

Second, the Arabic adjective *l-jaid-u* (the-good) is accompanied by the definite article *?al-* (the, assimilated here as *l-*) which is not the case in English because in English adjectives cannot be modified by articles.[18] In fact, the Arabic N + A is a superfluous word order for Arabic is an A+N language. The former is known as the ***Deep Structure*** and the latter as the ***Surface Structure***, i.e. resulting from transformations see (Fassi Fehri, 1999, 2012; Cinque, 1996, 2003, 2005).

Moreover, in some languages like Toba Batak (an Austronesian language of Indonesia), the article comes after the noun. Consider (7) which illustrates the point in question.

(7) *guru* *i*
teacher the

'The teacher.'

In (7), the definite article *i* (the) comes after the noun *guru* (teacher) it modifies. Languages are also not the same in word order at the sentence level. Now, consider (8) and (9) from Arabic and Hindi, respectively.

(8a) *ʕali-un* *?akal-a* *tufa:ħat-an* (SVO)
Ali ate apple

'Ali ate apple.'

[18] The N + A phrase word order is also manifested in French. Consider (i) below:

(i) *la* *maison* *splendide*
the *house* *splendid*

'The splendid house.'

where we notice that there is some kind of similarity between Arabic and English. This similarity lies in the fact that in the French N+A word order is similar to the superfluous Arabic one where the adjective postmodifes the head N. In (i), for instance, the French adjective, *splendide* (splendid) comes after the head N, i.e. *maison* (house) it modifies. However, there is some kind of difference between Arabic and French in such an order. This difference lies in the fact that while the adjective in Arabic has to be accompanied by the definite article *?al-* assimilated into *l-* (the), it is not the case in French.

(8b) *?akal-a* *ʕali-un* *tufaaħat-an* (VSO)
ate Ali apple

'Ali ate apple.'

(8c) *tufaaħat-an* *?akal-a* *ʕali-un* (OVS)
apple ate Ali

'Ali ate apple.'

(8d) *ʕali-un* *tufaaħat-an* *?akal-a* (SOV)
Ali apple ate

'Ali ate apple.'

(9) *Ale* *eka* *seba* *khate* (SOV)
Ali one apple ate

'Ali one apple ate.'

Arabic simple sentence examples in (8a-d) show that there are four word orders in Arabic, viz. SVO, VSO, OVS and SOV, respectively. In fact, there are six word orders in Arabic. The remaining two are VOS and OSV. However, the most commonly used are two, viz. VSO and SVO. The former is called verbal and the latter nominal. I believe that only these two word orders, viz. VSO and SVO are the common word orders considered in Arabic as far as the verb exists in an Arabic sentence. There is also a verbless sentence in Arabic. The term "verbless sentences" refers to such sentences which have no verbs as in *?ar--rajul-u jaid-un* (the man is good). However, as presented in (9), Hindi is an SOV language. The subject *Ale* (Ali), the object *eka seba* (one apple) and the verb *khate* (ate) appear in the sentence in that order, viz. SOV.

Thus, word order plays a crucial role in grammatical relations, i.e. determining that a sentence is grammatical or well-formed in a language when it is formed according to the word order rule of that language. Further, a sentence is ungrammatical or ill-formed if it is not formed according to the word order rule of that language. In English, for instance, (10a) and (10c) below are grammatical while (10b) and (10d) are not.

(10a) *Ali likes syntax.*

(10b) * *likes Ali syntax.*

(10c) *The man built a house.*

(10d) **Man the built house a.*

Now, the ungrammaticality of (10b) and (10d) lies in the fact that each violates the word order rule specific to English at both phrase and sentence levels. But why is that so? In fact, an answer to this question requires us to go back to Old English. It is believed that Old English used to have free word order like that of Arabic presented in (8) due to the fact that Old English used to have a very rich inflectional system like that of Arabic now. However, inflectional system was declined and hence, word order becomes fixed, i.e. SVO in modern English as far as sentence level is concerned.

4.3. Agreement

Another grammatical relation is what is known as agreement. What is meant by the term "agreement" is a grammatical relation holding between the verb and its external argument. In fact, there are also languages in which agreement is determined also by the internal argument of the verb as will be seen at the end of this section. [19] Such agreement is represented in terms of ϕ-features (person, number and gender) (see Chapter 3). As far as languages like English and Arabic are concerned, this agreement holds between the subject and verb in a sentence. As far as person is concerned, if the subject is 1st person, the verb has to be marked for 1st person. The same thing can be said about the other two types of person, viz. 2nd and 3rd. Regarding number, for the subject to agree with the verb, both have to show or be marked for singular, dual or plural. The same thing can be said about gender.

As has been stated so far, subject agrees with the verb in ϕ-features in English but it does not exhibit agreement marking for person and gender (see Chapter 3). However, agreement between the subject and verb in number is marked on verbs. Subject-verb agreement in number can be stated as: if the subject is singular, its verb has to be singular and if the subject is plural, its verb has to be plural. Now, consider (11a&b) which exemplify this phenomenon.

(11a) *The student loves the teacher.*

(11b) *The students love the teacher.*

[19] What is meant by verb arguments is simply the constituents, be they NPs, or clauses, that must occur with such a verb as subject and object. In (11a) below, for instance, the arguments of the verb *loves* are the subject *the student* and the object *the teacher.*

In (11a), the subject is singular and the verb agrees with it in this singularity which is indicated by the suffix ***-s*** on the verb *loves*. In (11b), the subject is plural and the verb is also plural indicated by the absence of ***–s*** on the verb *love*. However, subject-verb agreement in English is manifested only in present simple tense and only in number for all verbs and subjects. There is only one single case in English in which agreement between the subject and its verb in past simple and also person. This case is when the English verb ***be*** is used either as the main verb or auxiliary verb. (12a-d) and (13a-d) below demonstrate this point.

(12a) *I am a good scholar.*

(12b) *He is a good teacher.*

(12) *They are good teachers.*

(12d) *You are a good teacher.*

(13a) *I was a good scholar.*

(13b) *He was a good teacher.*

(13c) *They were good teachers.*

(13d) *You were a good teacher.*

In (12a-c), subject-verb agreement is exhibited obviously through the use of the present tense forms *am, is* and *are* with the subjects *I, He* and *they*, respectively. The same thing can be said about (13a-c) regarding past tense. However, it seems that the verb ***be*** does not show agreement with respect to 2nd person number represented by (12d) but it shows agreement with respect to tense both past and present manifested in (12d) and (13d). The reason of the former is that "you" is both singular and plural.

Now, a very crucial question to be addressed here is what assigns or triggers such an agreement between the subject and its verb. Is it the verb, subject or object? A plausible answer to this question shall be clear after considering (14a&b) and (15a&b) below.

(14a) *The student loves the teachers.*

(14b) *The students love the teachers.*

(15a) **The student love the teacher.*

(15a) **The students loves the teachers.*

Now, looking closely at (14a&b), we come up with a conclusion that it is the subject which ***triggers*** the agreement between the subject and its verb. For instance, in (14a), the subject *The student* is singular and the verb is singular, too. This singularity is shown by the addition of the third person present tense singular morpheme ***–s*** to the verb *love*. In (14b), the subject *The students* is plural and the verb is also plural. This plurality is shown by removing the third person present tense singular morpheme ***–s*** from the verb *love*. In addition, the ungrammaticality of (15a&b) lies in the fact that subject-verb agreement is not shown in both examples. For instance, in (15a), the subject is singular but the verb is plural. In (15a), however, the subject is plural but the verb is singular.

Again, looking at the (14) and (15), we notice that the subject is the first NP in both. Now, if we assume that it is the first NP which triggers the agreement between subject and verb in English. Could that be true? Let's first consider (16a-c) below.

(16a) *Every teacher loves Yemeni students.*

(16b) *Yemeni students every teacher loves.*

(16c) **Which students do every teacher love?*

As it is clear in (16), it seems that it is the subject which triggers the subject-verb agreement in English. In (16a), the first NP subject *every teacher* is singular and the verb is marked for such singularity with ***–s***. In (16b), however, the verb *loves* agrees with the subject *every teacher* though it is not the first NP but the second since the first NP in this example is the object *Yemeni students*. However, (16c) is ungrammatical and its ungrammaticality lies in the fact that the auxiliary verb *do* does not agree with the subject *every teacher*. Therefore, we can conclude that it is the subject *per se*, be it the first, second or wherever it is positioned which ***triggers*** the agreement between the subject and its verb and hence, the answer to the question raised above.

As stated above, languages differ with respect to word order as discussed regarding Arabic, English and Hindi. In fact, for languages to differ in whatever component, viz. phonology, morphology, syntax, etc. is an inevitable phenomenon otherwise there could have been only one language. Now, the question to be addressed here is that can there be some difference(s) with respect to subject-verb agreement between Arabic and English. To answer such a question, let's first consider the Arabic examples in (17), (18) and (19) provided below.

Number:

(17a) *?al-walad-u ?akal-a tuffaaħat-an*

The-boy ate.s apple

'The boy ate an apple.'

(17b) *?al-walad-aani* *?akal-aa* *tufaaħat-an*
The-boy-two ate.dl apple

'The boys ate an apple.'

(17c) *?al-?awlaad-u* *?akal-uu* *tufaaħat-an*
The-boys ate.pl apple

'The boys ate an apple.'

As has been stated earlier, Arabic has three numbers, viz. singular, dual and plural. These are represented in (17a), (17b) and (17c), respectively. For instance, in (17a), the subject *?al-walad-u* (the-boy) is singular and the verb *?akal-a* (ate) is singular marked with ***–a***. In (17b), the subject *?al-walad-aani* (the-two boys) is dual and the verb *?akal-aa* (ate) is dual marked with the dual suffix ***–aa***. In (17c), the subject *?al-?awalaad-u* (the-boys) is plural and the verb *?akal-uu* (ate) is plural marked with the plural suffix ***–uu***.

Person:

(18a) *?anaa* *?akal-tu* *tuffaaħat-an*
I ate-I apple

'I ate an apple.'

(18a') *naħnu* *?akal-naa* *tuffaaħat-an*
we ate apple

'We ate an apple.'

(18b) *?anta* *?akal-ta* *tuffaaħat-an*
You.s ate-you.s apple

'You ate an apple.'

(18b') *?ant-um* *?akal-tum* *tuffaaħat-an*

You.pl	ate-you.pl	apple

'You ate an apple.'

(18c)	*hua*	*?akal-a*	*tuffaaħat-an*
	he	ate	apple

'He ate an apple.'

(18c')	*hum*	*?akal-uu*	*tuffaaħat-an*
	they	ate	apple

'They ate an apple.'

In (18a-c), there are three sets. These sets represent the subject verb agreement in person, namely, 1st, 2nd and 3rd. In (18a), the 1st person singular subject *?anaa* (I) agrees with the verb *?akal-tu* (ate) which is marked for 1st person singular with ***–tu.*** In (18a'), the 1st person plural subject *naħnu* (we) agrees with the verb *?akal-naa* (ate) which is marked for 1st person plural with ***–naa.*** The same thing can be said about the other two sets regarding 2nd and 3rd person, respectively. Each set consists of two examples, i.e. the first is singular and the second is plural.

Gender:

Arabic also shows subject-verb agreement in gender. There are two types of gender in Arabic, viz. ***masculine*** and ***feminine***. What is meant by subject-verb agreement in this grammatical category is that if the subject is masculine, the verb has to bear masculineness feature and if the subject is feminine, the verb has to be feminine. Examples presented in (19) illustrate the issue in question.

(19a)	*?anta*	*?akal-ta*	*tuffaaħat-an*
	You.s.m	ate-you.s.m	apple

'You ate an apple.'

(19a')	*?ant-i*	*?akal-ti*	*tuffaaħat-an*
	You.s.f	ate-you.s.f	apple

'You ate an apple.'

(19b)	*hua*	*?akal-a*	*tuffaaħat-an*
	he	ate.m	apple

'He ate an apple.'

(19b')	*hia*	*?akal-a-t*	*tuffaaħat-an*
	she	ate.f	apple

'she ate an apple.'

(19c)	*hum*	*?akal-uu*	*tuffaaħat-an*
	They.m	ate.m.pl	apple

'They ate an apple.'

(19c')	*hunna*	*?akal-nna*	*tuffaaħat-an*
	They.f	ate.f.pl	apple

'They ate an apple.'

It is worth mentioning here that in Arabic, 1st person, be it singular or plural, does not show subject verb agreement in gender. However, in 2nd and 3rd, subject-verb agreement is shown on the verb. For instance, (19a) and (19a') represent masculine and feminine 2nd person agreement, respectively. The subject *?anta* (you) is a 2nd person singular and the verb *?akal-ta* (ate) is marked for masculine feature with ***–ta.*** In (19a'), the subject is *?ant-i* (you) is feminine and the verb *?akal-ti* (ate) is marked for feminine with ***–ti***. As it is clear in (19b&b'), the person is 3rd singular for both masculine and feminine. In the former, the subject is *hua* (he) and the verb *?akal-a* (ate) is marked for masculine 3rd person singular with ***–a***. In (19b'), the subject is *hia* (she) and the verb *?akal-a-t* (ate) is marked for 3rd person singular feminine with ***–t***. (19c) and (19c') can be explained in the same analogy with (19b) and (19b') but for plural 3rd person. It is important, however, to note how and what morphemes the masculine and feminine are marked with. The masculine morpheme attached to the verb is ***-uu*** and feminine one is ***–nna***.

Thus, the examples in (17-19) show that there is a big difference between Arabic and English in subject-verb agreement. In fact, such a difference does not lie in the existence of agreement as a syntactic phenomenon but in the way each language shows or marks such agreement. In Arabic, for instance, agreement between the subject and the verb is marked on the verb for all ϕ-features which is not the case in

English. In addition, there are only two numbers in English, namely, singular and plural but there are three numbers in Arabic, namely, singular, dual and plural. There is also a crucial difference between English and Arabic regarding subject-verb agreement. This difference lies in the fact that while Arabic marks subject verb agreement for all ϕ-features in both present and past tenses, English marks such an agreement only in present simple tense and only for number. Thus, we can conclude that there are several differences between Arabic and English with respect to subject-verb agreement and hence, the answer to the question above.

Contrary to English and Arabic, there are also languages in which the subject-verb agreement is determined by both the subject and the direct object of the verb and whether the verb is transitive or intransitive as in Lakhota language where, for instance, there is agreement between the verb, its subject and its object if the verb involved is transitive. Consider the examples in (20a&b) where the agreement markers indicating such agreement among the verb and its subject and object is shown as infixes infixed into the verb *nax?u* (hear) (Valin, 2004, p. 34).

(20a)	*(Miyé)*	*mathó*	*ki*	*hená*	*na-wíAha-wa-x?u.*
	(1sg)	bear	the	those	stem-3plobj-1sgsubj-hear

'I heard those bears.'

(20b)	Mathó	ki	hená	(miyé) na-má-θ-x?u-pi.
	bear	the	those	(1sg) stem-1sgobj-3subj-hear-pl

'Those bears heard me.'

The pronoun *miyé* (I) is considered independent and optional. It is used only if the speaker and/or writer would like to emphasize the hearing. Thus, in languages like Lakhota, it is not the subjects *per se* which trigger agreement as it is the case in English and Arabic, but the objects also determine such an agreement. In addition, there are also languages like Basque where agreement is shown on the three arguments in the case of ditransitive verbs.

4.4. Case Marking

The third grammatical relation to be discussed here is ***Case marking*** due to the fact that Case is a syntactic category which is considered an indication of how languages work at the level of sentences. From a Case perspective, we can determine what goes with what in a sentence. In other words, the three essential grammatical elements in a

sentence, i.e. subject, verb and object and the grammatical relations existing among them are reflected in terms of Case marking. It is widely believed that Case is one of the principles of Universal Grammar (UG) that all natural languages spoken all over the world have to have. Case is also one aspect through which we can decide whether a sentence is grammatical or not. Now, consider (21a&b) below.

(21a) *Ali ate an apple.*

(21b) **Ali ate an apple a banana.*

In (21a), there are three constituents in the sentence, viz. the subject *Ali,* the verb *ate* and the object *an apple* and each of which is assigned a function, and hence, Case and hence, being grammatical. However, in (21b), the sentence is ungrammatical. The ungrammaticality of such a sentence lies in the fact that the NP *a banana* has no Case.

In contemporary syntax, there are four main Cases in English and almost all other languages, viz. Nominative (Nom), Accusative (Acc), Genitive (Gen) and Dative (Dat). Linguists believe that Case plays a crucial role in manifesting grammatical relations among the constituents of a particular sentence because it purifies and clarifies not only the structure of the sentence but also its meaning. Some linguists consider Case-marking a coding property which verifies what elements necessary in a sentence and what is not necessary. Now, the question to be addressed here is that how is Case marked and on which lexical category? In fact, Case is marked by means of Case markers which are again inflectional suffixes attached only to NPs as far as English is concerned.

There are two types of Case-marking, viz. abstract and concrete depending on whether a particular language allows either of them. What is meant by abstract and concrete Case marking is that in the former, the inflectional Case markers do not appear on NPs in question but Case assignment is there while in the latter, they do appear on NPs. In other words, in abstract Case-marking, NPs are marked covertly and in concrete Case-marking, NPs are marked overtly by means of inflections. In English, for instance, NPs are Case-marked abstractly (covertly). In fact, in English, three Cases, viz. Nom, Acc and Dat are marked covertly on NPs while Gen is marked concretely (overtly). However, as far as the English pronominal system is concerned, personal pronouns are marked overtly for all Cases. This is demonstrated in (22a-f) below.

(22a) *John* *meets* *Jane.*
Nom Acc

(22). *He* *meets* *her.*
Nom Acc

(22c) *John* *gives* *Jane* *a book*
Nom Dat Acc

(22d) *He* *gives* *her* *a book*
Nom Dat Acc

(22e) T*he man's* *car*
Gen

(22f) *His* *car*
Gen

As can be seen in (22a-f), all English NPs, viz. *John, Jane* and *a book* are marked abstractly, i.e. no Case markers appear on them wherever they occur, be they subjects, indirect objects, direct objects, etc. for all Cases, namely, Nom, Dat and Acc, respectively, but the NP *the man's* is marked overtly for Gen Case with the possessive inflection ***'s*** as can be seen in (22e). However, personal pronouns, viz. *he, her, his* are marked overtly in all positions, be they subjects, indirect objects, direct objects or possessive as in (22b), (22d) and (22f) for all Cases, viz. Nom, Dat, Dat and Gen, respectively.

In some languages, which are very rich in inflectional system, like Arabic, on the other hand, NPs, are Case-marked concretely (overtly) but personal pronouns covertly. In fact, there are two types of personal pronouns in Arabic, viz. what is called *munfaşil* (independent) and *mutaşil* (dependent). The latter is called *clitics* (those which appear always cliticized, i.e. attached to other nouns. Arabic pronouns are marked *covertly* in the sense that each pronoun either independent or clitic has a particular form which does not change whatever function it *does* have in whatever position. Now, consider the Arabic examples given in (23a-f) which illustrate the issue in question.

(23a) *ʕali-un* *qabal-a* *fatimat-an*
Ali-Nom met Fatima-Acc
'Ali met Fatima.'

(23b) *hua* *qabal-a-ha*
he-Nom met-her-.Acc
'He met her.'

(23c) *ʕali-un ?aʕta fatimat-an kitaab-an*
Ali-Nom gave Fatima-Ind.Dat book-D.Acc
'Ali gave Fatima a book.'

(23d) *?ana ?aʕtai-tu-ha kitaab-an*
I-Nom gave-I.Nom-her-Dat book.Acc
'I gave her a book.'

(23e) *saia:rat-u ?aħmad-in*
Car-Nom Ahmed-Gen
'Ahmed's car.'

(23f) *saia:rt-u-ha*
car-Nom.her-Gen

In (23a) through (23f), the Arabic NPs, viz. *ali-un* (Ali), *fatimat-an*(Fatima) and *kitaab-an* (book) are marked concretely, i.e. Case markers appear on them. For instance, *ʕali-un* (Ali) functions as a subject, i.e. having a Nom Case in (23a) and hence, marked with the Nom case marker ***–un***. The NP *fatimat-an* (Fatima) functions as direct object in (23a) and indirect object in (23c) and in both functions, it is marked with Acc Case marker ***–an***. In addition, the NP *?aħmad-in* (Ahmed) functions as a possessor having a Gen Case and marked accordingly with the Gen Case marker ***–in***. However, personal pronouns, viz. *hua* (he), *?ana*(I) and *ha* (her) are not Case marked covertly. You can check this by considering the one form ***-ha*** (her) has in every position and whatever function it has in (23b), (23d) and (23f) above.

Moreover, there are some languages like German where Case is marked on articles as demonstrated in (24a&b) below.

(24a) *Der Mann sah den Hund*
The.Nom man saw the.Acc dog

'The man saw the dog.'

(24b) *Ich hab-e das Auto des Mann-es gesehen.*
I-.Nom have the.Acc car the.Gen man-Gen seen

'I have seen the man's car.'

In (24a) and (24b), it is obvious how Case is marked in German. For instance, in (24a), the Nom Case is marked with ***–er*** for animate NPs as in *Der* (the) modifying the noun *Mann* (man) and Acc Case is marked with the Acc Case marker ***-en*** *den* (the) modifying the noun *Hund* functioning as direct object. However, Gen Case in German is marked on both the article and noun as can be observed in (24b) where the definite article *des* (the) and the noun *Mann* (man) are Gen Case-marked with the suffix ***–es*** suffixed to them both. As far as pronominal system in German are concerned, pronouns are Case-marked overtly in a similar way as it is in English.

4.4.1. Case Assignment and Assigners

As has been stated above, Case is a universal property, i.e. NPs in almost all languages have to have Case depending on the function each has in a particular position to "secure" an NP not to be ruled out as can be seen in (21b) above. However, we have to question which Case assigned by which assigner and to which lexical category. It is, in fact, not the case that any NP can be assigned a Case by any other lexical and/or functional category haphazardly. In almost all languages, there are certain lexical and/or functional categories which assign Case to NPs. What is meant by "function" stated above is whether an NP functions as subject, indirect object/object one or direct object/object two or an object of a preposition. Moreover, by "lexical category" is meant a noun, a verb, an adjective, etc. and "functional category" means T(ense), I, Aux etc. (more on this in Chapter 8).

Thus, in English, Nom Case is assigned by T and to subject, Acc is assigned by transitive Vs and to direct object and objects of prepositions, Dat is assigned by transitive Vs but to indirect object and Gen is assigned by NP possessees to NP possessors. However, some languages like Arabic have their own Case assignment systems different from that of English. For instance, in Arabic, Nom Case is assigned by T and to subject, Acc to direct and indirect objects and Gen is assigned by NP possessee to possessors and by prepositions to their objects. Thus, we conclude this section with the fact that there are two types of Case, namely, structural and inherent. The former is assigned and licensed on syntax in terms of the relation between Case assigners and assignees and the latter is assigned inherently like that assigned to adverbs in Arabic (Chomsky, 1981). *Inherently* in the sense that it cannot be accounted for in terms of syntax.

Summary

Grammatical or dependency relations determine and verify certain syntactic relations among words in phrases, phrases in clauses and clauses in sentences. Three of such relations, namely, word order, agreement and Case marking have been examined in this Chapter. Word order, for instance, is said to be a grammatical relation which specifies a certain order of words in phrases and these in clauses and sentences. We have discussed SVO, VSO, OSV word orders exemplifying such orders from different languages like English, Arabic, Hindi, etc. As far as agreement is concerned, subject-verb agreement has been discussed and exemplified from different languages. Such agreement has been tackled in terms of ϕ-features (person, number and gender). There are also languages where agreement features encoded on the verb and its subject are determined also by the object as it is the case in Lakhota. Case being a universal of human languages is also discussed and exemplified in different languages like English, German, Arabic, etc. though in English and Arabic the issue has been discussed in more detail regarding how Case marking works and Case markers, assigners and assignee among other related issues.

Suggested Readings

You can look at Ibn Aqeel (1997) for Case and agreement in Arabic. You can also see (Fassi Fehri, 1993, 2012; Benmamoun, 1998, 2000, 2003) for a thorough discussion on Case and agreement in Arabic from a modern perspective. Ouhalla (1999) has devoted a complete Chapter for Case but it is quite advanced. For a very good source for word order, agreement and Case in English, see (Radford, 1997, 2004, 2009; Roberts, 1997; Haegeman, 1994, Adger, 2003).

For discussions on grammatical relations and thematic roles, see (Palmer, 1994; Jackendoff, 1990; Kreidler, 2002; Kearns, 2000; Rosen, 1984; Croft, 1991).

Exercises

1. Case is a Universal Principle and so each NP "having a phonetic content" must be assigned Case. ***Prove this statement true stating THREE Cases commonly shared by all languages, Case assigners and which assigner assigns which Case in English and Arabic.***

2. Chomsky states that it is the "subject which assigns Agreement Features to the verb but not vice versa in almost all human languages." ***Prove this statement true providing examples from English and Arabic.***

3. Chomsky maintains that there is some kind of underlying relation among the words constituting a given sentence. ***Prove this statement true focusing on subject-verb agreement stating which constituent triggers such an agreement and providing examples from English and Arabic in support of your answer.***

4. Though belonging to two different language families, there is some kind of similarity and also difference between Arabic and French in phrase word order. ***Bring out this kind of similarity stating where both languages differ supporting your answer with examples from both languages.***

5. In this Chapter, we have concluded that language variation and typology as a linguistic phenomenon does exist. ***Prove this statement true focusing on word order typology providing examples from at least three languages in support of your answer.***

5 Modification

5.1. The Nature of Modification

What makes a word more informative is the company it occurs with Al-Jarjani (1010-1078). In that, when we speak or write in English or in Arabic, it is not enough to write a noun or an adjective alone. For instance, if we want to describe a book written on English syntax and this book is full of information presented in a comprehensive way, we will not merely say that *This is a syntax book* but rather we may say *This is a very comprehensive book which has very useful information in syntax*. Now, if we remove *This is* from both sentences, we are left with *a syntax book* and *a very comprehensive book which has very useful information in syntax* which are both NPs the head of each is *book*.

If we examine the nature of both pieces of language, we will certainly recognize them as NPs. It is true that both NPs are meant to describe the *book* in question. However, the former presents merely basic information according to which we would just get or know that the book in question is about syntax and nothing more while the latter is more informative, i.e. it gives us more information about such a book. Specifically, the latter says that the book is about syntax, it is full of information and if you read it, you will get a lot of benefits. In other words, if you are preferred to choose either, you will certainly choose the latter simply because it gives you more information (you need) about the book than the former.

Now, the question to be addressed here is what makes the latter, let's say, better than the former? To answer such a question, what we need is just remove the similar word from both to see what remains. The similar words are *a*, *syntax* and *book* and what

remains is *very, comprehensive* and *which has very useful information in* (six words as one unit, a relative clause). The remaining words are nine. These words are what makes meaning clearer. These words including *a* and *syntax* are called modifiers of the word *book*. The word *book* is called a *head* because it controls all other words functioning as modifiers. In addition, as can be seen in the latter, some of these modifiers are nouns like *syntax,* articles like *a*, adverbs like *very*, adjectives like *comprehensive* and clauses like *which has very useful information*. Moreover, some of these modifiers occur to the left of (before) the head and some others to the right of (after) it. In the former, they are called *premodifiers* and in the latter *postmodifiers*. Thus, modification, as far as this book is concerned, can be defined as ***a syntactic process in which one word (head) controls other words, phrases and/or clauses (modifiers) which are set to describe such a head.***

5.2. Heads and Modifiers

Now, based on the above argument, the very idea coming to our mind when talking of syntax is structuring and once this structuring refers to the structuring of words in phrases, clauses and/or sentences, it is necessary that this structuring entails relations among such words. Such structural relations are known as ***Heads*** and ***Modifiers***. A head can simply be defined as ***a lexical category (word) which controls other words in a phrase or a sentence.*** A modifier can be simply defined as ***a word, phrase and/or clause which modifies, "decorates,"*** (***adds some information about, verifies, specifies, etc.***) ***the head***. Moreover, the head is the central constituent (element) and the modifiers are the peripheral constituents (elements) in a phrase. If we understand language as a means of expressing or communicating information, we could regard the head as a constituent which includes or expresses the most prominent information whereas the modifiers express extra information.

5.2.1. Premodifiers and Postmodifiers

As has been discussed above, premodifiers occur before the head and postmosifiers after it. Now, the question to be addressed here is that what are the constituents that can occur before and what are the constituents that can occur after a particular head? Now, let's consider the examples in (1a-k) and those in (2a-e) in which the answer to such a question is provided.

(1a) *student...*

(1b) A *student...*

(1c) The *student...*

(1d) The good *student*...
(1e) The very good *student*....
(1f) You *students*...
(1g) The university *student* ...
(1h) The Ibb university *student* ...
(1i) The *could-not-be-seen student*....
(1j) The *coming early student*...
(1k) The *first-to-attend (-the-class) student*...

(2a) The student present...
(2b) The *student* of Ibb University...
(2c) The *student* coming early to class...
(2d) The *student* to come early to class...
(2e) The *student* who came early to class...

It is worth mentioning here that the exemplified phrase in (1) and (2) is an NP. It has been chosen simply because it shows or represents what is to be the most modified phrase in English. Now, in both sets of examples, i.e. (1) and (2), the head is ***student*** and this head has been modified by premodifiers in (1) examples and postmodifiers in (2) ones. In the set (1), we notice that a head can occur alone as in (1a). It can be permodified by an article as in (1b) and (1c), an article and an adjective as in (1d), an article, an adverb and an adjective as in (1e), pronoun as in (1), and a full NP as in (1g) and (1h), an article and a finite VP as in (1i), an article and an *–ing* non-finite clause as in (1j) and an article and a *to-infinitival* non-finite clause as in (1k).[20]

What can postmodify a head N is illustrated in (2) set of examples. Thus, a head N can be postmodified by an adjective as in (2a), a PP as in (2b), an *–ing* non-finite clause as in (2c), a *to-infinitival* non-finite clause as in (2d) and a relative clause as in (1e). A word of caution must be stressed here that articles like ***a, an or the never modifies adjectives or adverbs.*** For instance, the article *the* in (1e), viz. *the very good student* does not modify the adverb *very*. Nor does it modify the adjective *good* but rather it modifies the whole NP, viz. *very good student*.

[20] Adverbs also can premodify a noun as in *The* very student *who came is Ali* and *The only person who came is Ali.* This is also true in Arabic as in *ħaqan rawʕah* (really greatness).

The examples presented in (1) and (2) can also provide us with more information about modifying and modifier structuring (ordering) in NPs, viz. which modifier can precede or follow which modifier.[21] A very important conclusion to end up this section with is that the crucial property of modifiers is that they could be removed and removing them changes the meaning and structure of the phrase involving them regarding extra information but not the main or core information.

5.3. Heads and Complements

We ended up the above section saying that a modifier, be it a word, a phrase or a clause can be removed and removing it does not change the central idea/meaning to be expressed or conveyed by the head. However, there are certain elements (words, phrases and/or clauses) that cannot be removed and if removed, then such a central meaning does change. Now, consider the examples (3a-c) which illustrate the point in question.

(3a) *Ali really likes syntax.*

(3b) *Ali likes syntax*

(3c) **Ali really likes.*

In (3a), the sentence *Ali really likes syntax,* in which *Ali* is the subject, *really* is an adverb premodifying the verb *likes* and *syntax* is the object of the verb *likes,* expresses a complete idea, i.e. it conveys a complete proposition (meaning) which is the real liking of syntax by Ali. In (3b), the adverb *really* which modifies the verb *likes* is removed but still the meaning is clear and complete. However, removing the word *syntax* as in (3c) is something else. In fact, when we removed the word *syntax* the meaning was not only changed but also not complete. Now, the question to be raised here is why is the meaning incomplete in (3c)? A plausible answer to this question lies in the fact that the head, i.e. the verb *like* is transitive, specifically monotransitive, viz. it has to have an object which in this case is the word *syntax.* Thus, when it is impossible to remove a word, a phrase or a clause from its head (controller), such a word, phrase or clause is called a ***complement***. Based on this argument, a complement can be defined as ***a constituent the deletion of which renders the phrase and/or sentence***

[21] In other phrases like APs, modifiers are only adverbs and adjectives as in *a **very simple kindhearted** man.* The only postmodifier in AP is the adverb *enough* as in *He is good enough* where *enough postmodifies* the adjective *good.* Modifiers in AdvPs are only adverbs as in *so very, really extremely, right now, etc.* PPs can be premodified and the only premodifiers of prepositions in English are adverbs as in *right down the hill* and *early in the morning* where *right* and *early* premodify *down* and *in,* respectively.

ungrammatical. Now, I can assume that by now you have a clear idea of what a head, a modifier and a complement each is.

Further, a head can be a verb, a noun, an adjective, etc. However, in this Chapter, we will discuss only verbs as heads and other types of heads and their subcategorized complements will be discussed in detailed in Chapter 7 in terms of ***subcategorization properties and selectional restrictions***. Thus, it suffices here to examine verbs and their different categorial complements. As heads, verbs impose the type and number of the complements they could have or occur with.

In any language, verbs are considered heads of sentences. However, the type and number of object(s) a verb as head has to have depends heavily on subcategorization properties and selectional restrictions of the verb (see Chapter 7 where a detailed discussion on subcategorization properties is provided).

In addition, there are verbs which do not require complements. Such verbs are called intransitive. The example in (4) below illustrates this point.

(4) *Ali laughed.*

The verb *laughed* in (4) has no complement yet the sentence is grammatical. This is so simply because *laugh* as a head does need anything to complete its structure and/or meaning.

As has been seen above, the verb *like* in (3a) can have only one complement, specifically an NP. In addition, there are verbs in English that need a PP as complement. Consider the examples in (5a&b) which illustrate this point.

(5a) *She relies on her father.*

(5b) **She relies her father.*

In (5), the verb *relies* has the PP *on her father* as a complement. It cannot, however, have an NP as a complement which is very clear from the ungrammaticality of (5b).

In addition, there are also verbs which require two NP complements. They have to have two complements and if one is missing, the sentence is ungrammatical. This is illustrated in (6a&b) below.

(6a) *Ali gave his friend a new book.*

(6b) **Ali gave his friend.*

In (6a), the sentence is grammatical because the verb *give* is ditransitive and the two complements, viz. the indirect and the direct objects, are available. However, (6b) is

ungrammatical and its ungrammaticality lies in the fact that there is only one object, namely, the Indirect object *his friend* available. The absence of the direct object in (6b) renders the whole construction ill-formed. From a semantic point of view, the meaning of (6b) is incomplete. *Incomplete* in the sense that it can be questioned as what did Ali give his friends? The answer to this question will be the direct object of the verb *give*. This category of verbs include *send* as in *He sent me a letter, buy* as in *He bought her a new watch,* etc. Moreover, the constructions involving verbs having to have two objects are called ***double object constructions*** see (Larson, 1988; Beck & Johnson, 2004).

There are also verbs which require two complements. However, this time the two complements are not NPs but rather an NP and a PP. Again, if one is missing, the sentence is ungrammatical. This is demonstrated in (7a&b) below.

(7a) *Alia put the book on the table.*

(7b) **Alia put the book.*

In (7a), the two required complements, viz. the NP *the book* and the PP *on the table* are present and so the sentence is grammatical. However, in (7b), the sentence is ungrammatical. It is so because one of the two required complements, namely, the PP *on the table* is missing. This category also includes verbs like *regard* as in *I regard this work as your only concern, sell* as in *I sold the book to you* and so on.

There are also verbs which require two complements but not NPs or an NP and a PP but rather an NP and a clause. The clause complement can be finite or non-finite. Examples in (8a-c) demonstrate the issue in question.

(8a) *I want you to see me tomorrow.*

(8b) *I told you that this story is unbelievable.*

(8c) *I found you reading a book.*

The type of verb in (8a) is one which requires and NP and a nonfinite clause as complements. The verb in this example is *want*, the NP complement is *you* and the nonfinite clause is *to see me tomorrow* which is a *to*-infinitival nonfinite clause. However, in (8b), there is some kind of difference in the type of complements. The verb here is *tell* which requires an NP complement, viz. *you* and a finite clause, i.e. *that*-clause *that this story is unbelievable*. (8c) shows us another category of verbs whose second complement is an *–ing* nonfinite clause.

In addition, there are verbs in English which require a nonfinite clause which could be either an *-ing clause* or a *to-infinitival* one. The former is illustrated in (9a) and the latter

in (9b). There is another category of verbs which require only a *to*-infinitival clause as a complement as demonstrated in (9c).

(9a) *I like reading Holy Qur'an early in the morning*

(9b) *I like to read Holy Qur'an early in the morning.*

(9c) *She tried to call her mother.*

Thus, in (9a), the complement of the verb *like* is the *–ing* nonfinite clause *reading Holy Qur'an early in the morning*. In (9b), the complement of the verb *like* is the to-infinitival clause *to read Holy Qur'an early in the morning*. In (9c), the verb *try* requires only *to*-infinitival clause as a complement which in this case is *tried to call her mother*. In fact, try-category cannot take an *–ing* clause as a complement. Nor, can it take any other type of complement like NP, PP, AP etc. Another category of verbs is the one exemplified in (9d) where the verb requires a finite clause, usually (*that*)-clause *per se*.

(9d) *I said that you are a good man.*

The finite clause *that you are a good man* is the complement of the verb *said* in (9d) above. This category also includes verbs like *believe, think* etc. Another category of verbs requires an NP and an object complement. This object complement could be an NP, an AP or a clause but this clause has to be *to-infinitival* nonfinite. This is demonstrated in (10a,b&c). Another category that can function as a complement of verbs is adverb(ials). Such a category of verbs can never take any other category like NPs, clauses, etc. This is demonstrated in (10d&e).

(10a) *I consider this topic my only concern.*

(10b) *I consider you innocent.*

(10c) *I consider you to be a good man.*

(10d) *I went home.*

(10e) *I went to the hospital*

In (10a,b&c), the verb *consider* has the NP *this topic* (10a) as an object. In (10b&c), it has the NP *you* and *my only concern, innocent* and *to be a good man* as object complements, respectively.[22] In (10d), the complement of the verb *go* is *home* which is an adverb of place and not an NP. In (10e), however, the complement of the verb *go* is the adverbial (constituting a PP) *to the hospital*.

[22] The constructions made up of the object and its object complement in each instance in (10a-c) are called in English ***Small Clauses***.

Finally, there is a category of verbs whose function is to link the subject to the subject complement. This subject complement could be NP, AP, finite/nonfinite clause. This category includes verbs like *be* (and its forms), *seem*, *feel, look, sound,* etc. This is illustrated in (11a-d).

(11a) *Ali seems sad.*

(11b) *Ali is a good man.*

(11c) *This is to tell you…*

(11d) *What you have to do is that you have to submit it tomorrow.*

The verb *seem* links the subject *Ali* to the subject complement AP *sad* in (11a). In (11b), the verb *is* links the subject *Ali* and its complement NP *a good man*. In (11c), the verb *is* links the subject *this* to its complement, i.e. the *to*-infinitival clause *to tell you.* In (11d), the verb *is* links the subject *what you have to do* to its finite clause complement *that you have to submit it tomorrow.*

5.4. Heads and Adjuncts

Central to syntax and syntactic analysis is the relation between heads and other constituents in a piece of language. In this respect, in fact, much has been said by linguists specifically syntacticians about heads and modifiers and complements of such heads. As has been stated above, what distinguishes modifiers from complements most is that while the former can be removed without changing the central idea and/or information conveyed by the head, the latter cannot be removed as removing them brings about a huge change to the meaning and renders the phrase, clause and/or sentence ungrammatical. Moreover, we used to describe a particular modifier as having been related to the head it modifies on either or both positions, viz. pre- and/or post-positions. However, at the clause level, there are some modifiers whose heads are to some extent difficult to be specified. Now, consider (12a-c) which illustrates this issue.

(12a) *Every student should attend syntax classes regularly.*

(12b) *She usually does her homework at night.*

(12c) *I will not laugh if you get angry.*

In (12a), the word *every* is related to the head *student* and hence, constituting the NP *every student*. *Should* is related to the head *attend*. The noun *syntax* is related to the head *classes* constituting the NP *syntax classes* which is in turn related to the verb

should attend constituting the VP *should attend syntax classes*. However, the adverb *regularly* is not related to the word immediately preceding it, namely, *classes*. Nor is it related to *syntax* or *students*. It is rather related to the verb *attend*. In that, it is *attending the syntax classes* which is modified by such an adverb. In (12b), there are two phrases, viz. *usually* and *at night* which are not related to any word in the sentence but only to the verb *does*. Moreover, if we look closely at (12c), we are to find a complete clause *if you get angry* each constituent of which is not related to any of the preceding clause *I will not laugh*. However, the whole clause, i.e. *if you get angry* is related in a way or another to the whole clause, i.e. *I will not laugh* and particularly to the verb *laugh*. Now, if we remove *regularly* from (12a), *usually* and *at night* from (12b) and *if you get angry* from (12c), nothing changes; the sentences are still grammatical and the central idea is fully conveyed in each. Consequently, could we say that *regularly* in (12a), *usually* and *at night* in (12b) and *if you get angry* in (12c) are modifiers? In fact, ***yes***, but modifiers of what?, actually of verbs and due to this, they are called ***adjuncts***. Now, you are right if you question this issue. In other words, if they are modifiers, why not calling them as such? Another question to be addressed here is that if complements of heads cannot be removed, then how is it that we include them in a Chapter on modification like the one we are reading?

Thus, the answer to the first question is that you can call them modifiers but to use the term "modifiers" for such adjuncts is not more specific as modifiers work differently. In that, there is no much space between modifiers and their heads like that between adjuncts and their heads. In other words, modifiers are in a way or another much related to the immediate constituents they modify coming before or after them, on the one hand. On the other hand, the term "adjuncts" is more specifically used for constituents modifying verbs (i.e. states of action). If this is so, it follows that there must be some kind of difference between an adjunct and a modifier. In fact, there ***is***. As we have seen, modifiers are always seen within phrases but adjuncts, in principle, are found within sentences. Thus, if this is so, it follows that an adjunct modifies the verb and sometimes a whole clause in a sentence. Thus, the main difference is that ***every modifier is an adjunct*** (adding extra information to any head it modifies, whatever this head is) ***but not every adjunct is a modifier for the fact that adjuncts are only modifiers of verbs***. The answer to the second question is so simple that we include complements in this Chapter due to the fact that ***a complement is a modifier but an obligatory one.***

Summary

What makes a word (usually a head) more informative is the company it occurs with Al-Jarjani (1010 -1078). In other words, a single word may have a meaning but not as clear and informative as it is modified by other words, phrases and/or sentences. The word

which carries the central meaning is called head and other elements are called modifiers. There are optional modifiers and obligatory ones. The former are called adjuncts and the latter complements. The difference between the former and the latter is that while the former can be removed, the latter cannot. Thus, if we remove modifiers the central meaning expressed by the head does not change but if we remove complements, the meaning *does* change. We said that it is the head which controls other elements in a piece of language, namely, the premodifiers and postmodifiers. Certain types of elements can premodify NPs and certain others postmodify them. AdvPs can pre-and post-modify APs where the only postmodifier Adv is *enough*. AdvPs can be premodify only by Advs. PPs can also be premodify by adverbs as in *early in the morning* where the Adv *early* premodifies the P *in*. In short, modification is an important phenomenon in any human language.

Suggested Readings

For a thorough discussion on modification in Arabic specifically NPs and APs, see (Fassi Fehri, 1999; Shormani, 2013b, in press; Kremers, 2003, Bardeas, 2088, 2009; Assiri, 2001; Holes).

As far as English is concerned, you can see (Abney, 1987; Aarts, 1997; Radford, 2004, 2009; Fabb, 1994; Keizer, 2007; Adger, 2003; Baltin, 1989, 2000) for modification in both phrasal and sentential levels. For complementation, see (Bresnan, 1972; O'Flynn, 2009; Rosenbaum, 1967).

Exercises

1. Identify the head and complement and their lexical categories in the following pieces of language:

i. The very good man...
ii. The very good man to speak English....
iii. The could-not-be-finished work done today....
iv. The idea that level three students are Yemen's true future....
v. The idea that level three students give about syntax.....
vi. So highly proud of you....
vii. la maison splendide
the house splendid

2. Identify the lexical category of the head, modifier and/or complement in the underlined pieces of language:

i. Adnan and Fatah saw **the man wearing a hat**
ii. Malik and Bashar will go home **right now.**
iii. **You students** are Yemen's Today's Seeds and **Yemen's Tomorrow's Fruits**.
iv. Muneef admired Musa's **answer to the question**.
v. Mulaiki's idea **that Level 3 students understand X^{I} Theory pleases Yaqoub and Wisam a lot.**

3. Linguists often say that syntax is the "Heart," semantics is the "Mind" and modifiers are the "Decorations" of language. ***Prove this statement true focusing on the role modifiers play in changing not only the syntax but also the semantics (meaning) of a given piece of language.***

4. Identify the modifier and complement in the following pieces of language:

i. The very good man...
ii. The very good man to speak English....
iii. The could-not-be-finished work done today....
iv. The idea that level three students are Yemen's true future....
v. The idea that level three students give about syntax.....
vi. So highly proud of you....
vii. *la maison splendide*
the house splendid

5. State the lexical category of the Multiple complements the verbs *Take, write, grow, get, buy* and *believe* exemplifying them in sentences of your won.

6 Constituent Structure

6.1. Constituency and Psychology

The concept ***constituency*** has been connected to the psychology of speakers' minds. This actually dates back to the 60s of the twentieth century when Garrett (1967) and his colleagues did several experiments demonstrating that ***constituency*** *does exist* in the speakers' minds. Such experiments consist in putting a click in a neutral place against the stream of sounds. The way participants in these experiments perceive those clicks shows that they could not perceive them in the right place of their occurrence. They could, however, perceive them only at the end of the constituents. Now, consider the examples in (1a) and (1b) which illustrate the point in question.

(1a) [*In her hope of visiting*] *Fat|ima was not sincere.*

(1b) [*Ahmed's hope of visiting Fat|ima*] *was not sincere.*

From a syntactic perspective, in (1a), we understand that *In her hope of visiting* forms a phrase, i.e. a PP. This PP was perceived (marked with the ⬆) as a unit by the participants though the click (marked with |) was placed on *Fatima* where participants excluded *Fatima* from the unit. However, in (1b), what was perceived is the whole unit *Ahmed's hope of visiting Fatima* where *Fatima* is not excluded. The unit perceived in each of (1a) and (1b) is called a ***constituent***.

From a psychological point of view, the participants' minds could not perceive *In her hope of visiting Fatima* in (1a) as a constituent due to the fact that *Fatima* is not part of such a constituent. However, their minds accept *Fatima* as part of the above constituent in (1b). In other words, our minds cannot accept something out of a constituent and that

language is not a haphazard phenomenon but rather an organized and systemized system. This also proves our argument that language is precise and concise (see Chapter 1).

In fact, ***constituency*** is considered the most prominent notion in syntactic theory and theorization. It is the basic tenet from which all syntactic theories arise. This is so because it is one of the approaches on which syntactic analysis depends heavily for the fact that it expresses the notion of words' relatedness in a particular syntactic unit. It also specifies how, why and which word can co-occur with which word. Moreover, it tries to account for our intuition and mental representation of our knowledge of language.

6.2. Constituent Structure in Syntactic Analysis

As has been discussed so far, crucial to syntax and syntactic analysis is how a piece of language is constructed into a phrase, a clause or a sentence. We also used to say that we know the structure of such a piece of language through its internal structure, viz. through knowing and identifying its head, complement(s) and/or modifier(s). Hence, the term "constituent" has been used in our analysis and discussion but without specifying its nature, just referring to it as an element. This Chapter will be devoted to investigating this term and its role in understanding how languages work at the level of each constituent and which particular piece of language makes a constituent. Thus, it follows that if we want to fully understand the internal structure of a piece of language, be it a phrase, clause or sentence, we need to concretely represent such structure. For the moment, consider the sentence in (1c).

(1c) *The sincere teachers loved their job.*

As we know that from a syntactic perspective, a sentence is defined as a linearized string of related words and hence, we can say that (1c) consists of the article *The,* the adjective *sincere,* the noun *teachers,* the verb *loved,* the possessive pronoun *their* and the noun *job*. However, it is not true that we construct a sentence by grouping words. There is actually an internal structure according to which words concatenate (combine) to form larger units called phrases. Now, the article *the,* the adjective *sincere* and the noun *teacher* form a unit, i.e. an NP, the possessive pronoun *their* and the noun *job* also form a unit, i.e. an NP also and the verb *loved* and the NP *their job* form another unit, i.e. VP and all these units form a sentence in that order. Each of these units, viz. NP, VP and sentence is called ***constituent***. When we consider the term "constituent structure," we mean how each constituent is internally organized in our minds, i.e. what

makes each word co-occur with another word related to it. This is often called in syntax ***dependency relation***.[23]

Dependency relation is one which determines what goes with what. For instance, the *the* in (1c) depends in its occurrence on the noun *teachers*. It does not depend on the adjective *sincere* simply because the latter is also dependent on the noun *teachers* on the one hand. On the other hand, articles never co-occur with adjectives (as far as English is concerned). In fact, this is also called ***syntagmatic relation*** which determines the co-occurrence of related words in a chain (string). For this point, it is worth also introducing another relation called ***paradigmatic***.

Paradigmatic relation is one which enables us to choose from a set of choices. For instance, in the NP *the sincere teachers* in (1c), there is a set of words which can replace the adjective *sincere*. This set includes *good, great, honest, responsible* among many other adjectives. There are various reasons that make both syntagmatic and paradigmatic relations essential in syntactic analysis of human languages the most important of which, as has been seen above, is that they make clear accounts for how a piece of language is systematically represented in our minds. They are also an important indication of our intuition. In that, there is an intuitive temptation that makes us certain that, for instance, the word *the* is more related to the noun *teacher* than it is to the verb *loved*. It is indirectly related to the verb *loved* through the noun *teachers*, however. Now, I assume that it is to some extent clear what we mean by the term "constituent", if it is not, (2) is a definition of such a term:

(2) **Constituent**: A linearized string of interrelated words that function together as a single unit in structure as well as in meaning.

The intuitive relation existing between the article *the* and the noun *teacher* in the above discussion is still vague. In other words, the relation is still unclear and somehow abstract. Consequently, there should be a concrete method which clarifies such vagueness. In fact, syntacticians never stop thinking of how to solve problems they are encountered with. They keep thinking when they face any problem to make our task in syntactic analysis easier. Thus, clarifying such vagueness has been the concern of linguists for a long time. One of the mental representations of the relation between elements in a phrase, a clause and/or a sentence is to divide them into constituents and put them in square brackets. Consider (3a&b) as an example.

(3a) *The boys*

Now, with the information you got from the previous discussions in Chapters 2 and 3, the first thing coming to your mind when looking at (3a) is that it is an NP consisting of

[23] See Chapter 4

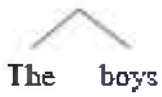
the article *the* and the noun *boys*. This can be represented by bracketing as in (3b) below.

(3b) [$_{NP}$ [$_{Art}$ the[$_{N}$ boys]]

What can be said about the mental representation in (3b) is that the whole NP, i.e. *the boys* is bracketed into the article *the* and the noun *boys*.

Another method of representation is in terms of structural hierarchy, i.e. a hierarchical order by means of tree diagrams. Thus, the NP in (3a) can be hierarchically represented as in (4) below.

(4)



From a hierarchical ordering perspective, the NP *the boys* in (4) is called a constituent. As has been stated above, constituency is considered the most prominent notion in the syntactic theorization. Now, looking at (4), we observe how the article *the* is related to the N *boys*. This is represented in a structural hierarchy. In fact, the method of bracketing we have made use of in (3b) is misleading specifically for beginners like us. It makes us sometimes commit mistakes in identifying the relation between two or more items in a constituent but the method represented in (4) is clear and seems convincing.

Now, considering (4) again, you certainly know that the NP *the boys* is not the end point for an NP to be. In other words, NPs in English and in almost all languages can be bigger than simply the one represented in (4). Consider the lengthier NP presented in (5).

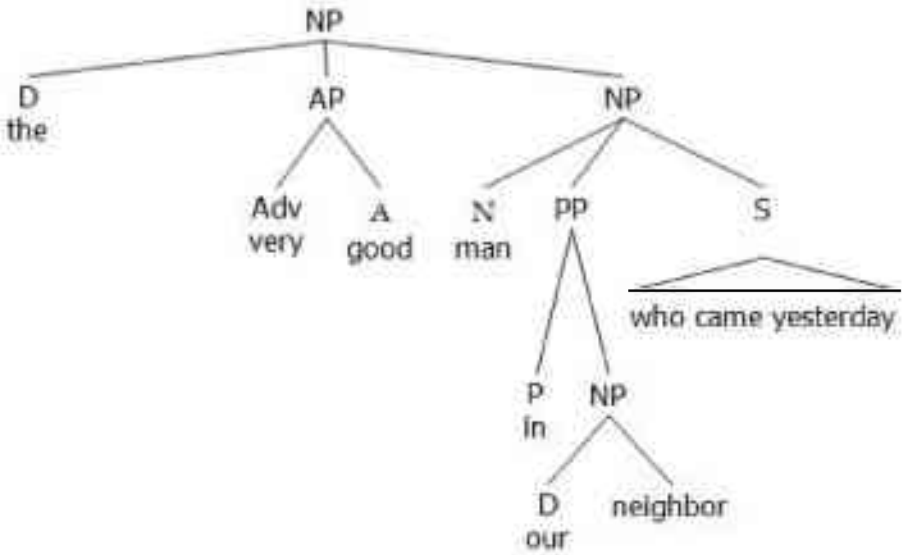
(5a) *The very good man in our neighbor who came yesterday.*

(5b) [$_{NP}$ [$_{Art}$ The [$_{AP}$ [$_{Adv}$ very] [$_{A}$ good]] [$_{N}$ man[$_{PP}$ [$_{P}$ in[$_{NP}$ our neighbor]][$_{S}$ [who came yesterday]]]]]]]]

In (5b), we find a bracketed representation of the NP in (5a). Each constituent is represented between [ ] within the larger constituent, i.e. the whole NP. How this is accounted for can be explained in taking [$_{AP}$ [$_{Adv}$ very] [$_{A}$ good]] as an example. Now the whole AP *very good* is a smaller constituent in the larger one, viz. the whole NP as [$_{AP}$ [$_{Adv}$ very] [$_{A}$ good]] where the AP consists of the adverb *very* represented in [$_{Adv}$ very] and the adjective *good* in [$_{A}$ good]. Both constituents are parts of a whole AP, i.e. [$_{AP}$ [$_{Adv}$ very] [$_{A}$ good]] and it goes the same way for other constituents until we get the whole constituent, i.e. [$_{NP}$ [$_{Art}$ The [$_{AP}$ [$_{Adv}$ very] [$_{A}$ good]] [$_{N}$ man[$_{PP}$ [$_{P}$ in[$_{NP}$ our neighbor]][$_{S}$ [who

came yesterday]]]]]]]]].[24] In addition, the relative clause *who came yesterday* is represented as a sentence for the fact that it has what is required by a sentence, viz. a subject, *who* a tensed verb *came* in addition to an adverb *yesterday* and from now on every clause of whatever type it is will be considered a sentence symbolized with ***S***. In a hierarchical order, or the otherwise tree diagram method, (5b) will be represented as in (6) below.

(6)



Now, what is going on in (6) is that the NP *The very good man in our neighbor who came yesterday* has been represented where each constituent like the AP *very good* is represented inside the whole NP. The same thing can be said about other constituents like PP, S, etc. You should notice that the term *Art* has been replaced by *D* which means *Determiner* because articles like *a, an* and *the,* possessive pronouns, *his, my, our*, etc., demonstrative pronouns like *this, that, these,* etc., quantifiers like *every, each*, etc., are determiners and from now on such items will be symbolized with *D*. The PP was divided into P *in* and NP *our neighbor*. The head N is *man*. The *S who came yesterday* has been put under triangle because we do not want to delve deeply in such an analysis here as our main concern is other constituents like NP, PP etc. S analysis will be discussed below as a separate topic. As has been stated above, the tree diagrams represented in (4) and (6) are clear and seem convincing more than bracketing method made use of in (3b) and (5b) and hence, we will abandon the latter and continue to use the former in our coming analysis due to the fact that the former

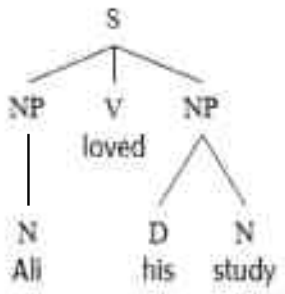
[24] By now, you certainly know what is meant by acronyms like NP, AP, etc. There are two other symbols, viz. *Art* and *S* you have not come across. The first is *Art* which stands for an article like *a, an* and *the*. The second is S which stands for a sentence.

obviously accounts for our intuition and mental representation of our knowledge of language. Now, consider (7a&b) below.

(7a) *Ali loved his study.*

This is an S where the NP *Ali* functions as a subject, *loved* as a verb and the NP *his study* as an object. A mental representation of (7a) will be presented in (7b) below.

(7b)



In (7b), you can notice how the S *Ali loved his study* is mentally represented. The NP functioning as the subject of the verb *loved* goes to N and then *Ali*. The NP functioning as the object of the verb goes to D and N and then *his* and *study*, respectively.

From the above discussion, you should bear in mind that either square representations or hierarchical representations are not haphazardly constructed but rather they are systematically organized. For instance, in (7b), we cannot put the NP *his study* to the left of the verb *loved*. Nor can we put the NP *Ali* to the right of the verb simply because English is an SVO language. You should also bear in mind that we have learned what constituent is in addition to knowing word classes like verb, noun, adjective, etc. We also know what notions like D, N, P, A, NP, AP, PP, etc. mean. Now, bearing all these features and notions in mind, we can develop a simple theory of a constituent structure of a phrase, clause and/or sentence not only in English but also in any language with some kind of difference, of course. However and as has been stated above, such a descriptive theory is not to be constructed haphazardly but rather in a systematic way. In other words, to develop an adequate descriptive theory we need rules able to "generate" (produce) grammatical pieces of language, be they phrases, clauses or sentences. In generative syntax, what we do is first devise rules and these rules are applied and then generalized to all languages. In syntax and I believe in any discipline a theory is called so only when it applies to other languages.

6.3. Phrase Structure Rules

The rules we are concerned with in the above paragraph are called *Phrase Structure Rules* (PSRs). Now, let's examine such rules and how the pieces of languages generated by them are represented in tree diagrams as can be seen in (6) and (7b) above. However, these trees are not drawn haphazardly but rather in a systematic and coherent way. This is due to the fact that if a tree is drawn haphazardly, the resultant structure will be inaccurate. Thus, it is very important here to know how to draw a particular tree diagram. This will be the main concern of the below section.

6.3.1. How to Draw Tree Diagrams

The diagrams in (6) and (7b) are well-known as *Tree Diagrams*. Such trees concretely represent the constituent structure of a given piece of language, be it a phrase, a clause or a sentence. A tree diagram begins with a *node*. A node is a point from which one or more lines can be initiated. These lines are known as *branches* (see Chapter 8 for more details on nodes and branches). In fact, there are two methods for drawing a tree diagram. These are *Buttom-up* method and *Top-down* one. In the former, we start from lexical items, i.e. words, and then go up and up till the tree is complete. In the latter, it is exactly the other way around. For beginners, *Buttom-up* is preferred but it is somehow confusing and time-consuming. Though the *Top-down* method is easy and fast, it is advanced. In that, one should be more careful and have full understanding of formulating the tree according to the constituent he/she is analyzing. All in all, there are some rules for constructing a tree diagram that should be taken into consideration. These are as follows.

i) Try to identify the type of the constituent you are dealing with, i.e. whether it is an NP, an AP, an S, etc.

ii) Try to determine the head of the constituent, i.e. whether it is an N, a V, etc.

iii) Each tree begins with a phrase notation, viz. NP, AP or VP, etc. depending on the identified head in ii).

iv) Make sure that any phrase, according to PSRs, has two levels, viz. phrase and head levels (e.g. a noun phrase has NP level and N level: see (8c) below).

v) According to PSRs, the number of branches you can initiate out of a node equals the sum of the head, complements and modifiers of that head (this will be clear the more you proceed in this Chapter).

Now, based on what has been discussed so far, we know that syntax or syntactic analysis is concerned with how words are structured in larger constituents, be they phrases, clauses or sentences. However, let's take the NP as the first constituent to begin with.

6.3.2. Noun Phrases (NPs)

In our previous discussion (see Chapter 2), we have involved different types of NPs. Among those involved, we have seen NPs consisting of an N, i.e. only a noun in their simplest structure and larger and larger ones. Thus, the PSR which generates the former type can be represented in (8a) exemplified in (8b).

(8a) NP ➔ N

(8b) Ali/car/dogs/rice

The rule in (8a) tells us that an NP can have an N *per se*. The symbol [➔] is read as "goes to" or "consists of." Thus, such an NP can be represented by any noun like *Ali, car*, dogs, *rice* and any noun without anything else. This rule can generate a tree diagram like (8c) below.

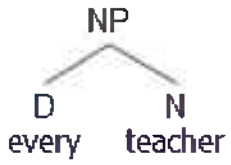
(8c)

However, we have NPs having determiners as modifiers like *a book, an apple, the teacher, every teacher,* etc. These NPs make the PSR in (8a) inaccurate and need to be reformulated to include Ds. Thus, for (9a) to include Ds, it has to be reformulated as (9a).

(9a) NP➔ D N

(9a) can generate trees like (9b) where the NP in question consists of the D *every* and the N *teacher*.

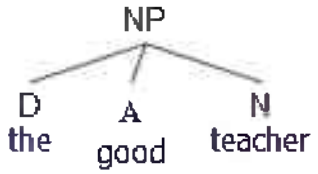
(9b)



We have modified the PSR in (8a) because we have NP having a determiner and a noun but it seems that this is not the end of the story due to the fact that there are NPs having adjectives as modifiers. Consequently, we need to reformulate the PSR in (9a) to include adjectives as modifiers and cover NPs like *the good teacher*. Thus, for such a purpose, we need a rule like (10a) which will construct trees like (10b).

(10a) NP ➔ D A N

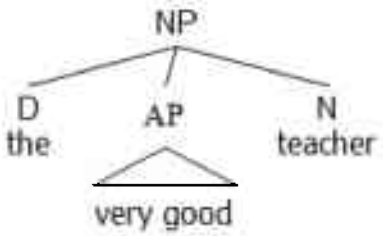
(10b)



Now, in (10b), we notice that there are three elements in the NP. These are the *D the,* the A *good* and the N *teacher.* However, we have NPs which are modified with complete AP like *the very good teacher* where the AP *very good* modifies the N *teacher.* Now, we need to reformulate the PSR in (10a) to cover such NPs. This is illustrated in (11a) which can construct trees like (11b)

(11a) NP➔ D AP N[25]

(11b)



Now, comparing (11b) to (10b), we notice that the difference lies in (11b) having an AP which modifies the N *teacher*. We also notice that the AP *very good* has been put under a triangle as a convention in such cases.[26]

You will also notice that we have been reformulating each rule we consider for the fact that there are actually data from English (NPs existing in English like the ones above) which make us reformulate our rules to cope with and cover such instances. In fact, the

[25] We can also have NPs like *Ibb university students* where the head N, i.e. *students* has been modified by another NP, viz. *Ibb University*. We can also have lengthier NPs where modifiers are all NPs such as *Ibb University student union president office*. This NP can also be prolonged as much as we wish.

[26] A triangle is used here and will be used elsewhere for no theoretical foundations. It is just to avoid a detailed analysis of the constituents under investigation.

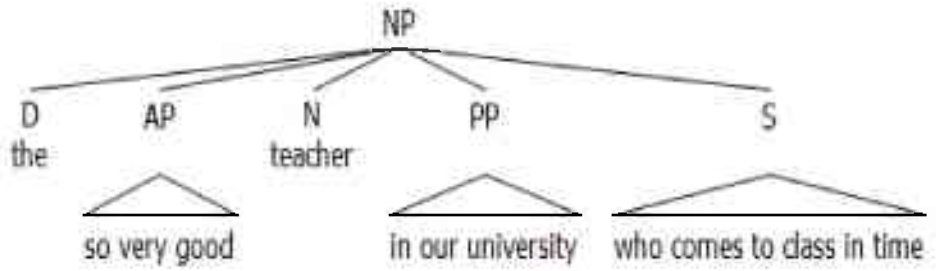
story goes on and on in reformulating our rules until reaching a status where the last reformulated rule can account for the biggest NP in English. However, due to the fact that such a sequence of reformulations will make us spend a lot of time and space, we may summarize all processes in one encompassing all reformulations. Thus, the biggest NP in English we can find looks like (12) below.

(12) *The so very good teacher in our university who comes to class in time….*

The NP in (12) requires us to reformulate the PSR in (11a) to cover such NPs in English. Thus, after reformulating (11a), we get (13a) which is able to generate trees like (13b).

(13a) NP ➔ D AP N PP S

(13b)



In fact, the NP in (13a) can also be prolonged as much as you wish making use of the generating value PSRs grant us which is "recurring" of modifiers as many as we want (see ***recursion*** at the end of this Chapter). However, such recurring modifiers are of the types in (13a), namely, AP an NP, premodifying, and PP and S postmodifying the *head* N. [27] Thus, we can prolong such an NP to get *the so very good teacher in our university who comes to class in time in the whole academic year of our study in English department where it is necessary to*…It can even be prolonged further and further. In fact, the prolonging of phrases proves it true that human language is creative, productive and novel (see Chapter 1, section **1.2.**)

Now, comparing (13a) to (8a), we are vis-à-vis a very crucial conclusion, viz. all the constituents in (13a) other than the head N *teacher* can be removed. Now, if we actually remove them, we are left with the head N. If this is true, it follows that as far as NPs are concerned; only the head N is obligatory and other constituents like D, AP, NP, PP, etc.

[27] This modification can be exemplified in NPs like *Ali is* ***the very good university student in the whole world who comes to class on time*** where the NP ***the very good university*** premodifies the head N ***student*** and the PP ***in the whole world*** and the S ***who comes on time*** postmodify it.

are optional. If it is so, then, it follows that we need an operation to be done to (13a), nevertheless, this time, it is not reformulation but just modification, i.e. it is necessary to pinpoint which constituents are optional and which are obligatory. To do this, the conventional method is to put those optional between brackets ( ) and leave those obligatory without and hence, getting (14) below.

(14) NP ➔ (D) (AP) (NP) N (PP) (S)

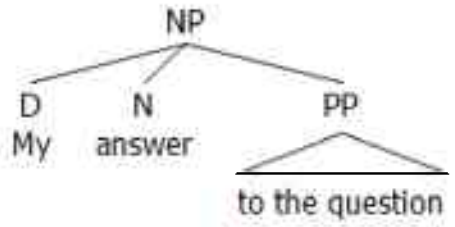
In (14), we can remove all but the head N. We cannot remove this head simply because if we do, then no constituent remains, i.e. what remains is ϕ.

However, it is worth mentioning here that even nouns in English can have complements (see Chapter 7) in NPs like (15a) where the PP *to the question* is a complement of the head *answer.*

(15a) *My* answer to the question

(15a) represents an NP where the D is *my*, the head is *answer* and the complement is the PP *to the question*. Now, consider how this NP is derived in PSRs in (15b).

(15b)



Here, the PP to the question is represented at the same level of the head answer and the D *my* is represented in the same level as well. This actually tells us ***a crucial fact of PSRs that it does not distinguish a modifier from a complement.*** We will come back to this very important point in (Chapter 8).

6.3.3. Adjective Phrases (APs)

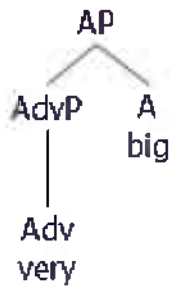
PSRs also account for APs. They generate different types of APs and their tree diagrams. Now, consider (16a), its PSR rule in (16b) and its tree diagram in (16c).

(17a) *The* ***very big*** *house*

(17b) AP➔ (AdvP) A

In (17a), there is an AP within a larger constituent, viz. the NP *the very big house*. Now, the A *big modifies* the head N *house*. However, the Adv *very* modifies the A *big* and not the head N *house*. If this so, it follows that *very big* constitutes a constituent, i.e. AP. As the rule in (17b) specifies, an A can be premodified by AdvPs. Now, the question to be addressed here is that can an adjective be premodified by another adjective? Before answering such a question, let's examine some NPs like *the big wide house*. Now, the question is does the A *big* modifies the A *wide* or the N *house*? Actually, it modifies the N *house* due to the fact that only "house" can be *big* and thus *wide* cannot be *big*. This entails that an A cannot modify another A and hence, answering the question addressed above. Why the rule in (17b) specifies an AdvP and not an Adv *per se* is due to the fact that in English there exist some NPs like *the very highly respected man* where the Adv *very* premodifies the Adv *highly* and both constitute an AdvP which as a whole is a premodifier to the A *respected*. Thus, the rule in (17b) will generate tree diagrams like (17c) below.

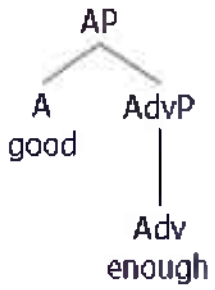
(17c)



However, there are some data from English like *Ali is good enough* that make us rethink or revise the PSR in (17b). Here, *enough* is said to postmodify the A *good*. Consequently, the rule in (17b) has to be modified. Consider the revised version of (17b) in (18a) and its tree in (18b) below.

(18a) AP➔ (AdvP) A (AdvP)

(18b)

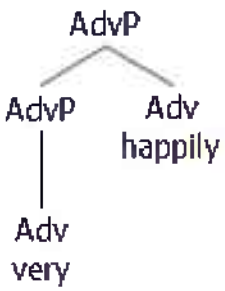


6.3.4. Adverb Phrases (AdvPs)

As has been concluded above, APs cannot modify other APs. However, it seems true that AdvPs can modify other AdvPs. Now, reconsider the example stated above, namely, *the very highly respected man* where the Adv *very* premodifies the Adv *highly.* What makes us say so is the fact that in addition to the previous example there are plenty of examples demonstrating this phenomenon. (19a) is the rule specific to AdvP *very happily* in *He talked very happily* and (19b) is its tree diagram.

(19a) AdvP ➔ (AdvP) Adv

(19b)



In (19b), the Adv *very* premodifies the Adv *happily*. As far as meaning is concerned, the Adv *very* here *intensifies* the meaning of the Adv *happily*.[28]

6.3.5. Preposition Phrases (PPs)

Recall from Chapter 2 that though prepositions are functional words, they are used widely in the language. Recall also from Chapter 2 that the head of a PP, i.e. P must have a complement and may or may not have a modifier.[29] In fact, prepositions are believed to be *transitive* in the sense that they have to have complements. Now, consider the PP in (20a)

(20a) *The rock rolled* ***right down the hill***.

[28] In English, there are adverbs called Intensifiers like *so, very, extremely, etc.* which give the adjective and/or adverb they modify more intensity in degree, quality or quantity.

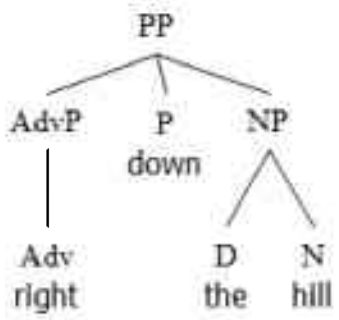
[29] Some linguists (e.g. Carne, 2002) argue that some prepositions in English like *in, out* and *before* as in *I have not come here before* do not require NPs as complements. However, to me, as it seems, in such cases, the complement is understood from the context. Thus, in the above example, the sentence could have been *I have not come here before [this time].* Some other linguists (e.g. Quirck, 1985) consider them adverbs which seems to me more convincing.

The PP *right down the hill* in (20a) provides us with evidence that PPs are premodified in English. If we examine the word class of the word *right,* it is actually an adverb.[30] Thus, the PP *right down the hill* in (20a) will entail a PS rule manifested in (20b).

(20b) PP ➔ (AdvP) P NP

This rule will generate trees like (20c) below.

(20c)



6.3.6. Verb Phrases (VPs)

VPs are one of the most confusing constituents in their structure due to the fact that verbs have an underlying ability to take several modifiers and of different types. What I mean by types here is simply constituent types like NPs, PPs, APs, Ss, etc. They also have an underlying ability to take one or two complements (see Chapter 7). Now, consider (21a&b) below which represent the smallest structure of verbs especially intransitive ones.

(21a) *He laughed.*

The verb *laughed* in ((21a) is intransitive, i.e. it does not require an object. Thus, the PSR describing this sentence is provided in (21b) entailing the tree diagram in (21c) below.

(21b) VP➔ V

[30] Another evidence can be seen in sentences like *I will be there only at six o'clock* where the adverb *only* premodifies the P *at*.

(21c)

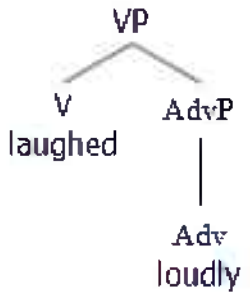
However, verbs could be premodified and/or postmodified by adverbs. Now, consider (22a) which illustrates such a phenomenon.

(22a) *He laughed loudly.*

The Adv *loudly* in (104a) postmodifies the verb *laughed*. This will have the PSR in (22b) and the tree diagram in (22c).

(22b) VP ➔ V (AdvP)

(22c)

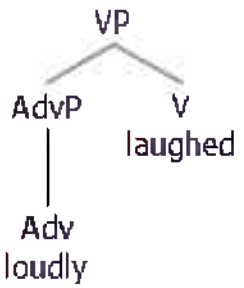


Now, consider how the Adv *loudly* can occur to the left of the verb *laughed*, i.e. premodifying the verb in question. This is illustrated in (23a) having, along with (23b), the PSR in (23b) and the tree diagram in (23c).

(23a) *He loudly laughed.*

(23b) VP➔ (AdvP) V (AdvP)

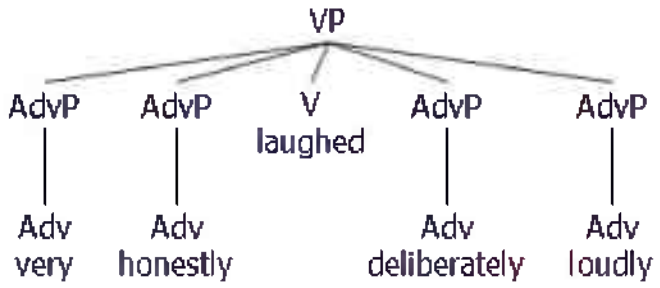
(23c)



In fact, the ability of AdvPs to occur in both sides of the verb, i.e. pre-and postmodifying position is not the end story of AdvP modifiers of VP because such AdvPs can also recur and because of this ability, we can find sentences such as *He very honestly laughed deliberately loudly* entailing a PSR as in (24a).and a tree diagram like (24b)

(24a) VP➔ (AdvP+) V (AdvP+)[31]

(24b)



The above four PSRs, namely, (21b), (22b), (23b) and (24a) are only concerning intransitive verbs like *laughed* and the modifiers that can co-occur with such verbs. However, there is also a class of verbs (transitive verbs) which has to have objects. Such objects, in fact, bring about a change to the PSRs. Now, consider how we have to reformulate the PSRs to cope with verbs exemplified in (25a) whose rule will be something like (25b) and the tree diagram will be like (25c).

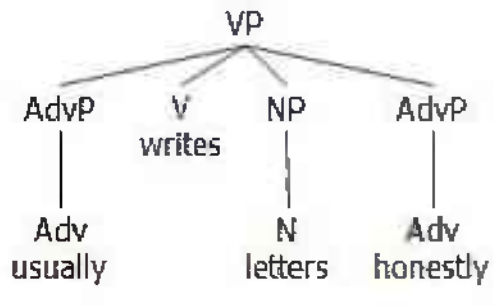
(25a) *She usually writes letters honestly.*

(25b) VP ➔ AdvP+) V (NP) (AdvP+)

[31] I have used the "+" sign to indicate the possibility of the recurrence of a constituent. Here, the AdvP, for instance, can recur as many times as we wish.

You might have a question now as to why we put the NP between brackets (optional) though it is here an obligatory constituent of the verb *write*. In fact, the reason of doing so is that when we formulate a rule (a PSR), we do not look at the nature of the verb, i.e. intransitive or transitive. We are actually vis-à-vis a general rule which could be exploited for such occasions in language use. Thus, the PSR in (25b) could be used to generate sentences, specifically VPs for both transitive and intransitive verbs.

(25c)



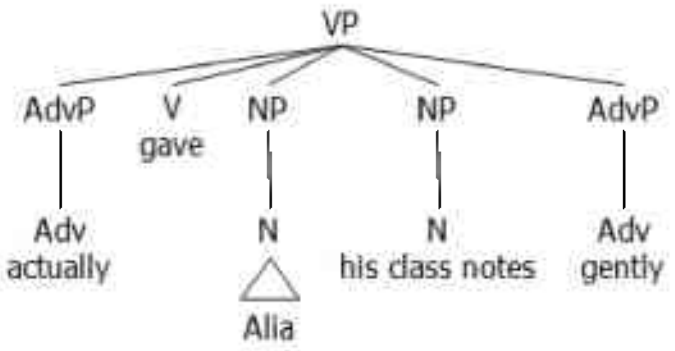
Moreover, in English, there is also a class of verbs (ditransitive verbs) which require two NPs as objects. This turns also in a change to the PSR in (25b) above to cover such sentences. Consider (26a) exemplifying such a class of verbs, the reformulated PSR in (26b) and its tree diagram in (26c) below.

(26a) *Ali actually gave Alia his class notes gently.*

(26b) VP ➔ (AdvP+) V (NP) (NP) (AdvP+)

Now, you might ask a question here why don't we put only one NP and put (+) in the same way we have done regarding adverbs? The answer to this question, however, is very clear if you are just convinced that the maximum objects verbs can have is ***two***. The fact that the two objects that a ditransitive verb can maximally have compels us to put them both in the rule and so far so good. Now, consider the tree diagram the rule in (26b) can generate in (26c).

(26c)

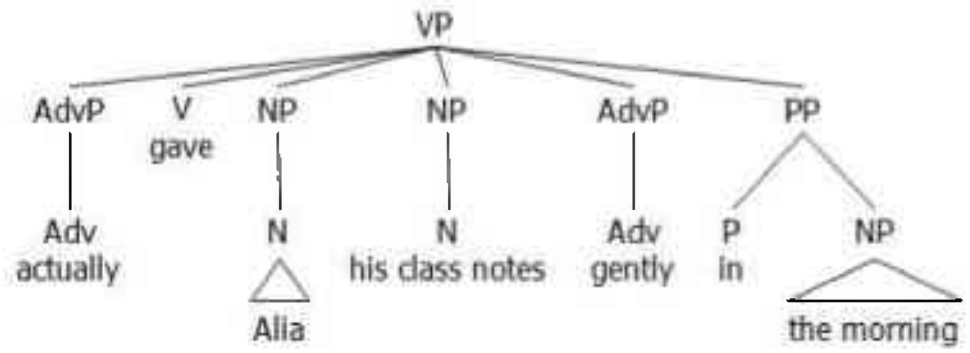


Another fact about verbs, be they intransitive, monotransitive or ditransitive, is that they could be modified by PPs and this compels us again to reformulate the PSR in (26b). Thus, consider (27a) which exemplifies the issue in question, (27b) its PS rule and (27c) its tree diagram.

(27a) *Ali actually gave Alia his class notes gently in the morning*

(27b) VP ➔ (AdvP+) V (NP) (NP) (AdvP+) (PP+)[32]

(27c)



It must be clear by now to you how PSRs concerning VP derivation work and develop from being VP➔ V in (21b) to VP ➔ AdvP+) V (NP) (NP) (AdvP+) in (27b).

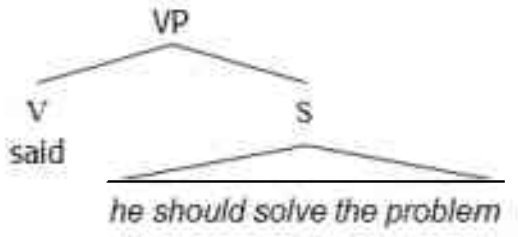
However, it seems that this is not our last round with PSRs concerning VPs. Now, recall from Chapter 3 that there are some verbs like *think, say,* etc. which require a sentence to be a complement. This also compels us to reformulate our VP rule. Now, consider (28a&b) which exemplify the issue in question having the derivation tree in (28c).

(28a) *He said he should solve the problem.*

(28b) VP➔ V S

[32] Note that the (AdvP+) (PP+) in (27b) can be positioned the other way around and hence, getting a sequence like VP ➔ AdvP+) V (NP) (NP) (PP+) (AdvP+) which can generate sentences like *Ali actually gave Alia his class notes in the morning gently.*

(28c)



In (28a), the verb *said* has a complete sentence as a complement and hence, the PS rule in (28b) which in turn generates tree diagrams like (28c). Now, you might wonder why we have to proceed step by step reformulating each PSR concerning any constituent and why not having a single rule. In fact, we have been going in such a step-by-step way just to show you how systematized syntax is and how we ought to think!! We first think of simple things, then when we face some problems arousing from anything, we then proceed and seek solutions to such problems. For instance, what makes us think of reformulating the PS rule in (11a), namely, NP➔ D AP N to become (13a) NP ➔ D AP N PP S is finding real English data in which such phrases as *The so very good teacher in our university who comes to class in time do* exist and thus, we have to reformulate our existing rules to suit those data for every constituent of any type, be it an NP, an AP, a VP, etc.

6.3.7. Sentences (S)

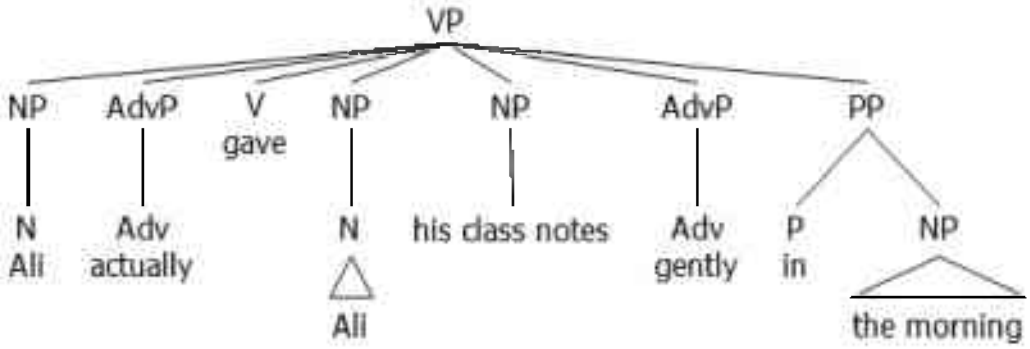
Recalling from Chapters 4, 5 and 6 how a sentence is constructed and what constituents it may have given you a clear idea of what a sentence is. If you recall from the above section, i.e. the PSRs concerning VPs, you notice that we have been using full sentences to derive such rules. However, our main concern there has been only PSRs concerning VPs and we have not made a touch upon clauses or sentences. This section, therefore, will be devoted to complete sentences and how to derive adequate PSRs to cover all the possibilities of the sentences existing in English.

Now, if we reconsider the sentence in (27a), i.e. *Ali actually gave Alia his class notes gently in the morning*, it gives us a lot about sentence PSRs and how a sentence can be generated in English. This is so for the fact that what a sentence is is shown in this sentence, viz. in terms of its constituents. In other words, what makes up a sentence is just constituents (NPs, APs, PPs and/or VPs) and these constituents have been dealt with in the previous sections. What remains is the fact that we have not considered the subjects of VPs and thus by involving subjects in our argument, a clear and full picture

will be drawn about the sentence as a constituent and hence, its PSRs. If what has been stated is true, it follows that we do not need to involve ourselves in analyzing the sentence from a zero level because only subjects have to be involved. Now and since subjects are usually NPs (clauses could also be incorporated), it follows that an adequate PSR for an S will be derived from (27b) and will look like (29a) which will have its derivation tree in (29b).

(29a) **S** ➔ NP (AdvP+) V (NP) (NP) (AdvP+) (PP+)

(29b)



By now, we have a clear picture about the English S's PSRs after involving subjects into our formulation of such PSRs and derive their tree diagrams. To repeat a point stated above, comparing (27b) to (29a), it is clear that we derive the latter from the former incorporating the NP subject, namely, *Ali*. Now, we know that S➔ NP (AdvP+) V (NP) (NP) (AdvP+) (PP+) ***and*** VP➔ (AdvP+) V (NP) (NP) (AdvP+) (PP+) and if we remove (AdvP+) V (NP) (NP) (AdvP+) (PP+) from both, as shown in the formula (30), the resultant PSR looks like (31):

$$(30)\ S \rightarrow \frac{NP\ \cancel{(AdvP+)\ V\ (NP)\ (NP)\ (AdvP+)\ (PP+)}}{\cancel{(AdvP+)\ V\ (NP)\ (NP)\ (AdvP+)\ (PP+)}}\ VP$$

(31) S➔ NP VP

6.3.7.1. Aux as a Constituent

Now, there is a question seeking an answer. This question is is it possible to say that (31) is the final rule that can cover and derive all possible sentences in English? Before answering such a question, let's consider the possible English sentence in (32a) below.

(32a) *Ali could solve the problem.*

The sentence in (32a) has a new entry, viz. the modal *could*. It is also possible to have a sentence in English like (32b)

(32b) *Ali could have been solving the problem.*

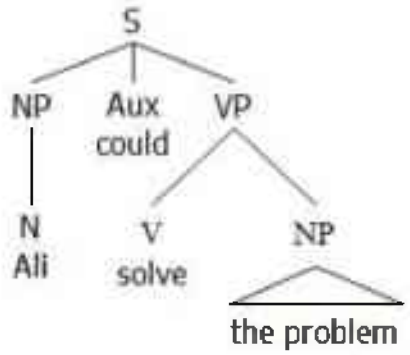
where we have *could, have* and *been* that have to be introduced in our final rule in addition to the main verb *solving* and hence, it seems that the PSR in (31) is not the end story. In other words, we need to reformulate the rule in (31) to cover and be able to generate sentences like (32b) above. Now, the question is what are these and how to include them in our theory? In fact, such verbs are called ***Modals*** which in addition to verbs like ***Be, Have*** and ***Do*** are called ***auxiliaries***. In addition, we cannot also assume that such verbs are adjuncts to the main verb for the fact that, as can be seen in (32a), *could* carries the tense and the main verb *solve* is tenseless and hence, proving it true that when present in the sentence, such verbs have to be dealt with as constituents. This leads us to maintain that these verbs have to have a ***position*** in our theory.

If we reconsider our question above, it is necessary that if we want to seek a plausible answer to it, we need to pinpoint the nature of such verbs. Now, we know that verbs like ***Modals, Be, Have***, etc. are auxiliaries and we use them for certain purposes such as expressing probabilities, certainties, etc. in the case of ***Modals*** and expressing ***Aspect*** as in the case of ***Be*** and ***Have*** such as *progressive* and *perfective*, respectively. Thus, we need to propose a constituent called ***auxiliary*** abbreviating it to ***Aux*** and hence, our next PSR for S would look like (33).

(33a) **S→** NP Aux VP

The rule in (33) which actually represents the sentence in (32a) will generate trees like (33b).

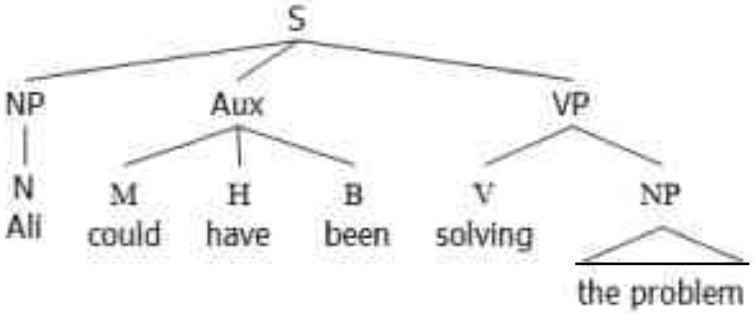
(33b)



Though the rule in (33a) does not specify the number of auxiliaries that a sentence could have, it is necessary here that we have to incorporate this in (33a). *Incorporate* in the sense that whatever auxiliaries used will be included under the node ***Aux***.[33] Thus, sentences such as (34a) will have derivation trees like (34b).

(34a) *Ali could have been solving the problem.*

(34b)



In (34b), the auxiliary verbs *could, have* and *been* have been included under the node ***Aux***.[34] Thus, it seems that we have solved the problem of auxiliary occurrences by introducing the node ***Aux*** into the derivation after incorporating it in the (33a) above.

It also seems that the rule in (33a) needs reformulation as we are still encountering problems arising from negative sentences like (35a) where the negative particle *not* is introduced. In fact, negation is a universal that all human languages share and it has to be incorporated into our theory so that such a theory covers all linguistic phenomena.

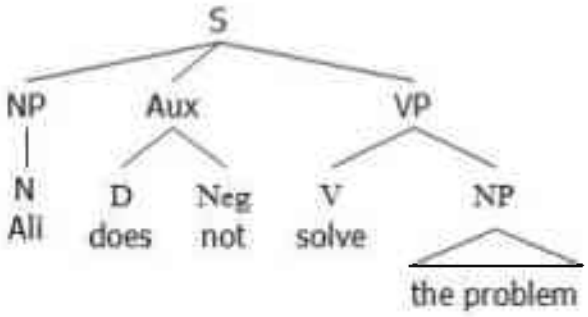
[33] See (section **6.3.1**) above for more about the notion *node*

[34] The capitals ***M, H, B, and D*** stand for ***Modals, Have, Be*** and ***Do***, respectively.

However, if we consider the nature of negation in English and as far as sentential negation is concerned, the negative particle *not* is attached to an auxiliary.[35] Consequently, our task seems easier. *Easier* in the sense that negation will be introduced under the node ***Aux***. We will represent it by the term ***Neg***. Now, consider (35a) whose derivation will be (35b).

(35a) *Ali does not solve the problem.*

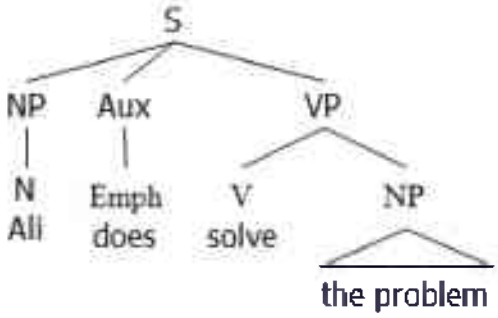
(35b)



In addition, it is possible that in English we may face sentences like (36a). Such sentences are called ***emphatic*** whose purpose is to emphasize the meaning expressed by a particular verb (state of action) in a particular sentence. However, as it is clear in (36a) that emphasis is introduced by the verb *do* and since *do* is an auxiliary, our task in introducing *Emph* into our derivation manifested in the rule (31a) will be easier.[36] If this is true, it follows that *Emph* will be a part of the node ***Aux*** and it also follows that (36a) will have a derivation tree like (36b).

(36a) *Ali does solve the problem.*

(36b)



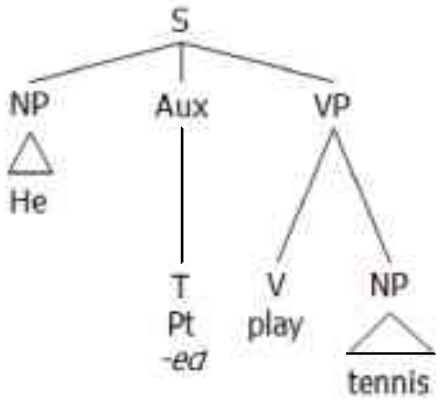
[35] There are different types of negation in English such as *affixal*, adverbial, *determinal*, etc.
[36] ***Emph*** stands for ***emphasis***.

6.3.7.2. T as part of Aux

Now, recall from Chapter 3 that what distinguishes a finite clause verb from a nonfinite one is the tense (T) feature on the verb of the finite clause and since the T is carried by the auxiliary verb when present (see examples in (32-36), it follows that T is part of ***Aux*** and hence, T has to be introduced into our theory. If, however, any auxiliary verb is not present in the sentence, T is carried by the main verb. Now, consider the example in (37a) and its derivation tree in (37b) illustrating the issue in question.

(37a) *He played tennis.*

(37b)



In (37b), there is only one item under the node *Aux*, namely, the past tense morpheme ***–ed***. Now, you may notice that the structure of the sentence (37a) represented in (37b) is ungrammatical for the fact that ***–ed*** comes before the verb *play* but ***I can tell you that for the moment do not worry about this.*** If your derivation results in trees like (37b), it is normal because there is another operation called ***V-Raising to I*** which is actually a ***Transformational Rule*** (see Chapter 8 for details about this).

In the above arguments, we have concluded that all types of auxiliary verbs plus T are parts of ***Aux***. However, comparing the sentences given in (32-36) to the one given in (37), you will observe that while sentences in (32-36) can occur without *auxiliary* verbs like ***Modals, Be, Do*** and ***Have***, the sentence in (37) cannot occur without T. If this is true, it follows that, in principle, T is obligatory and since T is part of ***Aux***, it also follows that ***Aux*** is an obligatory constituent in the sentence. This actually makes us unable to put ***Aux*** in brackets as we used to do with optional elements.

Thus, it seems that the rule in (31b) and actually incorporating all ***Aux*** elements like ***Modals, Have, Be, Neg, T***, etc. resulting in (33a) is our final derivation site with respect

to S. However, since the rule in (33a) enables us to derive simple sentences (sentences with only one tensed verb), we are still encountered with complex sentences (sentences with more than one tensed verb including subordinate clauses and/or complement ones) like the one given in (38a). Such complex sentences need to be incorporated in our PSRs Theory but how such an incorporation could be done. First, let's consider the sentence in (38a).

(38a) *He said that he should leave now.*

Now, if looking at the sentence given in (33a), we are to find a complex sentence consisting of two clauses, the main *He said* and the complement one *that he should leave now* and hence the latter is embedded into the former. *Embedded* in the sense that one clause is included within the other.[37] In (33a), for instance, the complement clause *that he should leave* is embedded into the main clause *He said* and due to the fact that the embedded clause functions to complement the matrix one, and because *that* is a Complementizer, we will use the symbol **S^{I}** for any clause, be it complement or subordinate and will have a rule like (38b).

(38b) **S^{I} ➔ Comp S**

It is worth mentioning here what is meant by some symbols like ***S^{I}*** and ***Comp***. In fact, ***S^{I}*** stands for a clause (reads **S bar**) and ***Comp*** for any Complementizer.[38] Thus, based on such an argument, the VP rule will have to be reformulated to incorporate the rule in (38b) giving the rule in (38c) below.

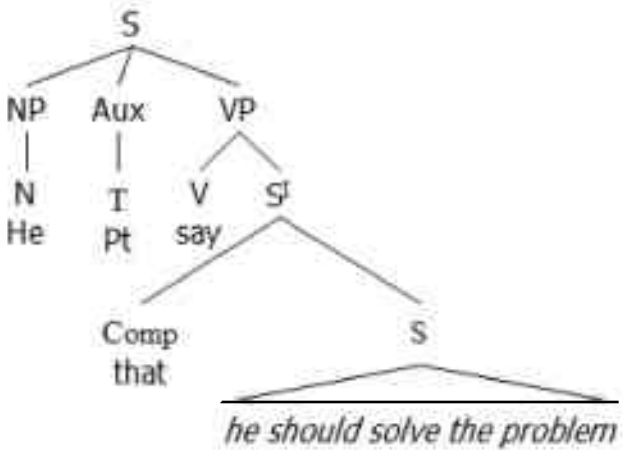
(38c) VP➔ Aux V (S^{I})

According to (38c), the sentence in (38a) will have a derivation tree like (38d) below.

[37] The main difference between a sentence and clause is that while the former can always stand alone, the latter cannot specifically subordinate clauses.

[38] Complementizers are subordinators like *that, what, why, who, which* and so on.

(38d)

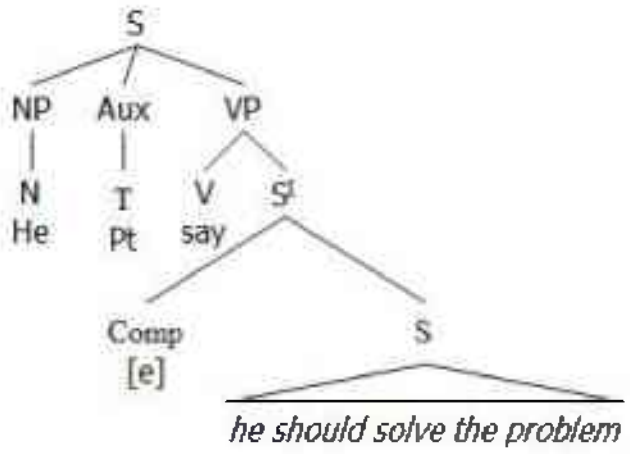


Note that in (38d), only T occupies Aux position because there is no auxiliary. The verb *said* has been put in the infinitive form *say* because *tense* has been taken away from it. The Aux is occupied by T which is past (Pt) under which the past morpheme ***–ed*** is positioned.

In (38a), the verb *said* takes an S^{I} complement with the Complementizer *that* but sometimes verbs like *say, think,* etc. do not take *that* as in (39a). Now, the question is whether to consider such embedded clauses S^{I} or only S. In fact, such clauses are considered S^{I} even though *that* is missing and Comp will be represented by **[e]**. Consider (39b) to see how such sentences are derived.

(39a) *He said he should solve the problem.*

(39b)

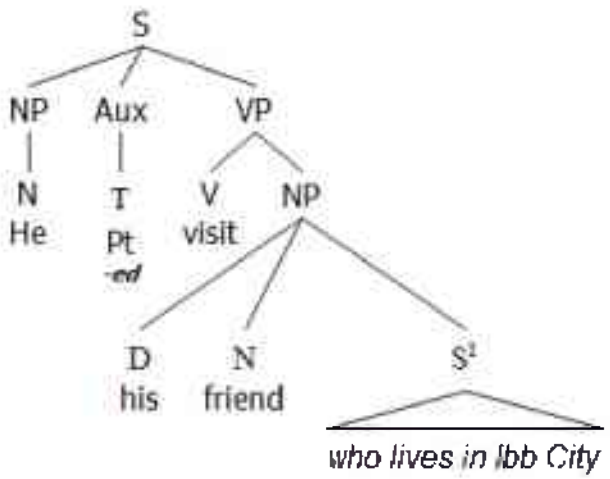


Thus, it is clear that even though the complementizer is missing, the complement of the verb *said* ***remains*** an ***S'*** which has to be applied anywhere ***from now on***. In addition, there are sentences in English where the embedded clause is not a complement of the verb but just a modifier of any constituent, be it an NP, AP, VP, etc. As is clear from the examples above, and also below, there are verbs which can have inflections like ***–ed, -s***, etc. but there are certain verbs on which such inflections cannot appear specifically those of past tense. Consequently, from now on, where inflection can appear, we will put it but where not, we will just leave it indicating the tense with ***Pr*** or ***Pt***. Now, consider (40a) below.

(40a) *Ali visited his friend who lives in Ibb City*

If we look closely at (40a), we find that it is a complex sentence having two clauses, viz. the main *Ali visited his friend* and the relative one *who lives in Ibb City*. Unlike (39a), here the S' modifies the NP *his friend* and hence, having the derivation tree in (40b) below.

(40b)

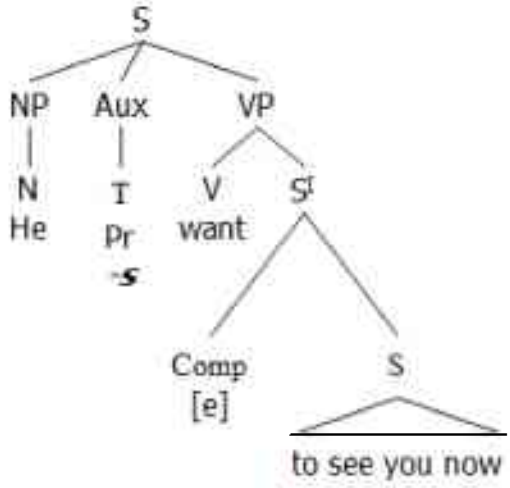


Now, comparing (39b) to (40b), it is obvious that while in the former, the S' complements the V, in the latter, the S' modifies the N.

What has been tackled above concerns PSRs for finite clauses, i.e. either main or subordinate. However, it is also possible to have sentences like (41a) where the clause is a *to*-infinitival nonfinite. Such a clause may function as a complement as in (41a) or a modifier for any constituent as in (42a) having the derivation trees in (41b) and (42b), respectively. Even in such cases, S' is used and the *Comp* will be represented as [e] appearing on (41b).

(41a) *He wants to see you now.*

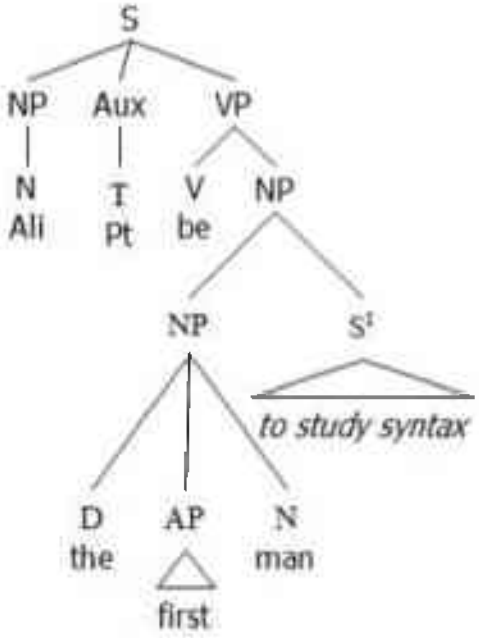
(41b)



As has been stated above, the S' in (41b) functions as the complement of the V. However, nonfinite clauses can function as modifiers as well. This point is demonstrated in (42a) which has the derivation tree in (42b).

(42a) *Ali was the first man to study syntax.*

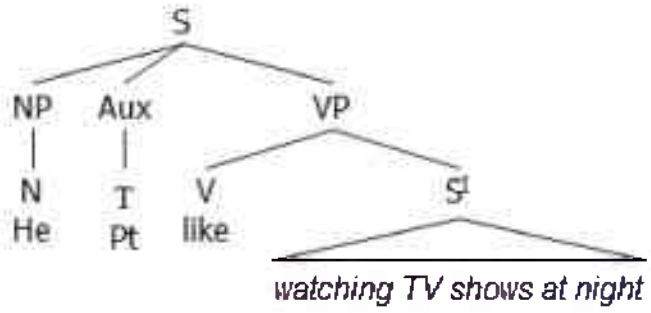
(42b)



There are also sentences where *–ing* nonfinite clauses may take any function of those discussed above. (43a) and (43b) illustrate the issue in question where the former represents the sentence and the latter its derivation tree.

(43a) *He liked watching TV shows at night*

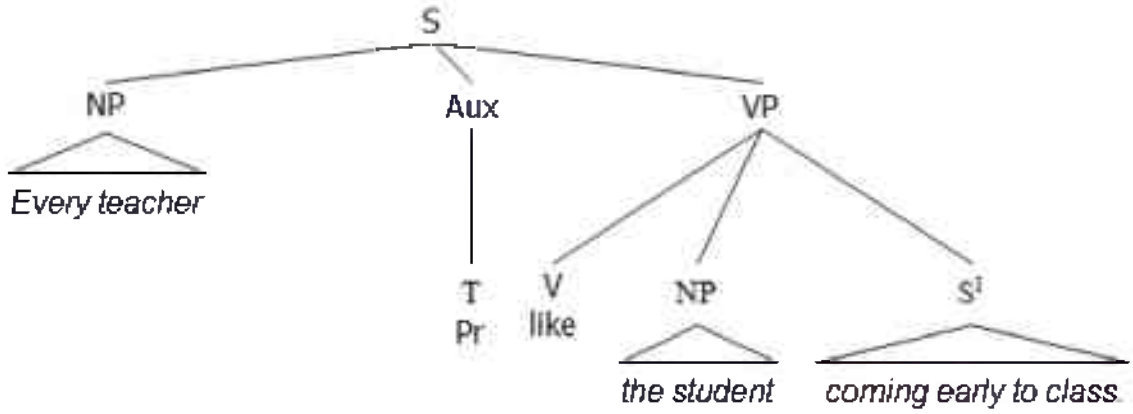
(43b)



Such nonfinite clauses may function as modifiers for any constituent. Like the above ones, let it here be an NP. Thus, (44a) will be derived as in (44b).

(44a) *Every teacher likes the student coming early to class.*

(44b)



We end up the above section stating that the PSR concerning the generation of tree diagrams for sentence is S➔ NP Aux VP specifying that the subject is an NP. Now, recall from Chapter 3 that there are clauses in English which can function as subjects of the sentences. Now, consider the sentences in (45a) which illustrate this point.

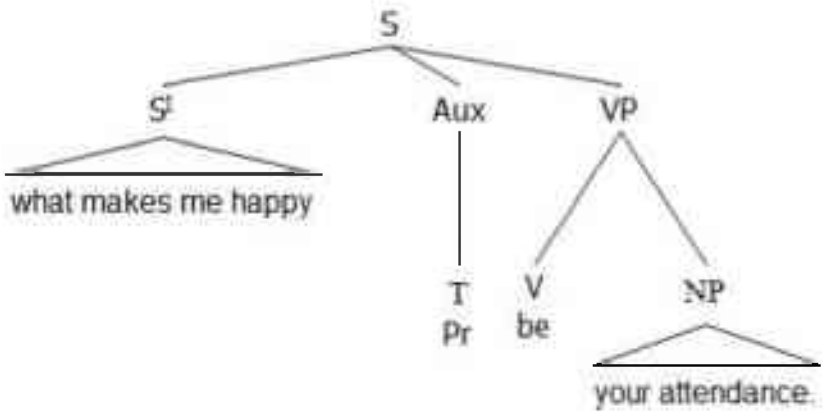
(45a) *What makes me happy is your attendance.*

In (45a), the clause *what makes me happy* functions as the subject of the main verb *is*. This actually puts us vis-à-vis an important need to reformulate the PSR which generates the sentence to a new form which will look like (45b) where S is introduced.

(45b) S➔ S/NP Aux VP

What should be noticed here is that the slash (/) has been put between the S and the NP in the subject position in the PSR in (45b). The reason of putting the slash is that either S or NP can function as the subject but not both, on the one hand and that there are no brackets used between S/NP due to the fact that the subject in any *finite* clause is a ***must***. Now, this rule enables us to generate sentences whose derivation will look like (45c) below.

(45c)



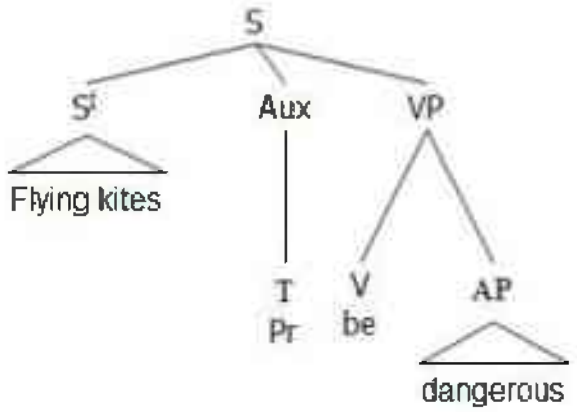
Note here that the S' *what makes me happy* as a whole has been put as the subject of the sentence and hence, occupying the NP position in derivations like (44b).

It is worth mentioning here that nonfinite clauses, be they of *to-infinitival* type or *–ing form* one, can function as subjects of a sentence. Now, consider (45d) and (45e) having their derivation trees in (45f) and (45g), respectively.

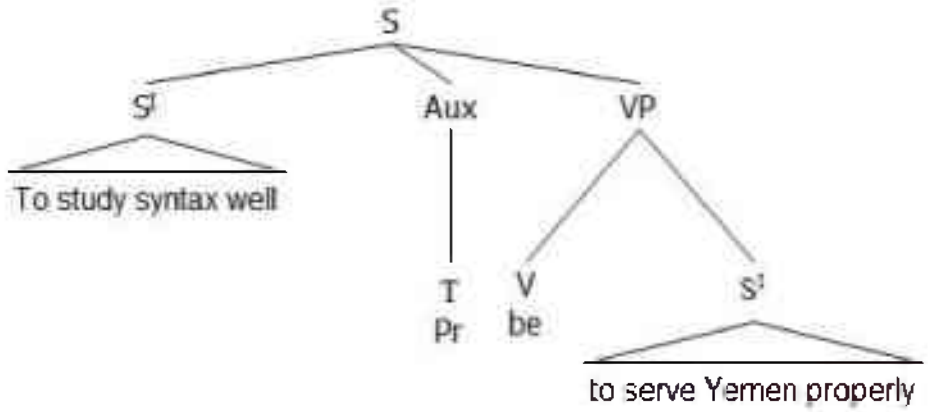
(45d) *Flying kites is dangerous.*

(45e) *To study syntax well is to serve Yemen properly.*

(45f)



(45g)



In (45f), the *-ing* nonfinite clause *flying kites* functions as the subject of the sentence and hence, occupying the subject position termed as an S^{I}. However, in (45g), both the subject and subject complement are *to-infinitival* nonfinite clauses. As is clear in the tree diagram, both occupy the subject position and the object one, respectively, occupying the position labeled S^{I} both.

Thus, with this much on PSRs, the rule concerning sentence generation and derivation in (45b) seems to be our final site on such a topic in general taking into account all PSRs concerning all other constituents such as NPs, PPs, APs, AdvPs, VPs and so on.

6.4. Recursion

In what has been stated above, the most noticed property of PSRs is the fact that they can be repeated. In other words, the rule concerning S is S➔ NP Aux VP. However, NP

can have NP, AP, AdvP, S[(I)] inside it and VP can have all these (see Exercise (x) in Chapter 3), i.e. *Who gives me what I want gives those who work hard what they want to firmly face what others think that it is in what they have consists their failure.* This sentence can even be prolonged as much as we wish. Thus, the recursion phenomenon can be best understood as follows: ***from a finite number of words and rules, an infinite number of phrases and/or sentences can be generated***.

7.5. Generalizing PSRs

Thus, the PSR concerning the constituent structure can be generalized in the following PSRs.

i) S➔ NP Aux VP

ii) NP ➔ (D) (AP+) N (PP+) (S)

iii) Aux ➔ (Mod) (Have) (Be) (Neg) (Emph) T

iv) VP➔(AdvP+) V (NP) ({NP/S}) (AdvP+) (PP+) (AdvP+)

v) PP ➔ (advP) P (NP)

vi) AP➔ (AdvP) AP

vii) AdvP ➔(AdvP) Adv

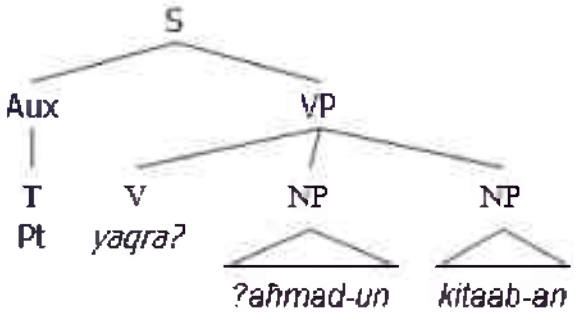
6.6. Application of PSRs to Other languages

As has been stated somewhere else, syntax has been ascertained to be a scientific discipline and that implies that for any syntactic hypothesis, program and/or framework to be a theory, it has to be applied to more than one language. In fact, such an application makes clear whether it can account for language variation since languages, in principle, are different. Thus, applying PSRs Theory to languages other than English could also determine whether there are certain phenomena in any language that could not be accounted for in this theory and hence, leading to revising, developing and/or modifying it. However, it should be made clear here that our application of PSRs to other languages than English will be limited to sentence level. Now, consider (46a&b) representing data from Arabic.

(46a)	*qara?-a*	*?aħmad-un*	*kitaab-an*
	read-pt	Ahmed	book

'Ahmed read a book.'

(46b)



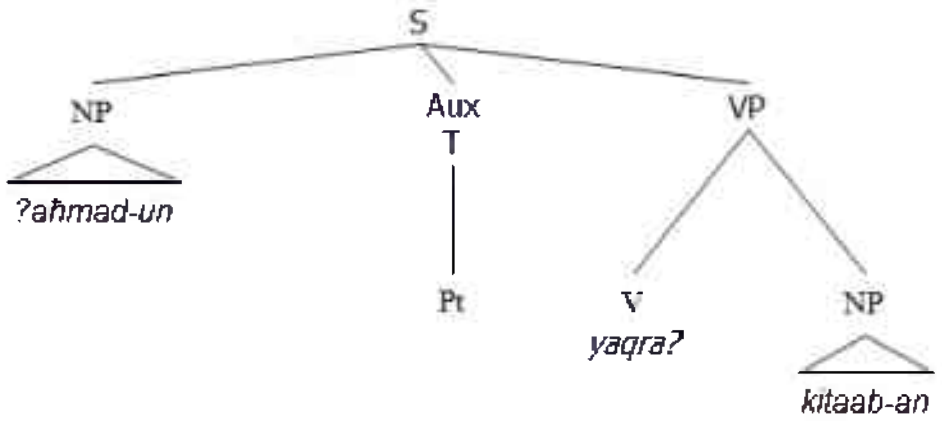
In (46b), there is something new to be noticed. The subject NP *?aħmad-un* (Ahmed) occurs inside VP but to the left of the object NP *kitaab-an* (book). Now, you may wonder how is it that the subject NP can occur inside the VP and whether the PSR concerning S should be modified to cover such word order and hence, resulting in a rule like S➔ Aux VP. However, if we closely look at the sentence in (46a), we will find it of a VSO word order and hence, the subject must originate inside the VP. In fact, there is nothing in the PSRs Theory that says that the subject of an S must be outside VP. Now, why not considering it a VP?, but if we do so, what about the Aux specifically T which distinguishes the S from the VP? However, if we look at the nature of the sentence in (46a), we will find that everything necessitated by being a sentence is available, viz. Aux—T, V, subject and object. In addition, there is nothing in the PSRs Theory that says that the subject of an S must be outside VP on the one hand. On the other hand, according to PSRs, a node can branch into several nodes, which is what we find here. Now, if our argument is true, it follows that we need not reformulate the PSRs concerning the S discussed above. Thus, we can claim that word order does not affect the S rule in (33a) above and consequently the PSRs Theory.

However, Arabic does not have only a VSO word order. It has also an SVO one, viz. similar to that of English. Now, consider (47a&b) illustrating the issue in question.

(47a)	*?aħmad-un*	*qara?-a*	*kitaab-an*
	Ahmed	read-pt	book

'Ahmed read a book.'

(47b)



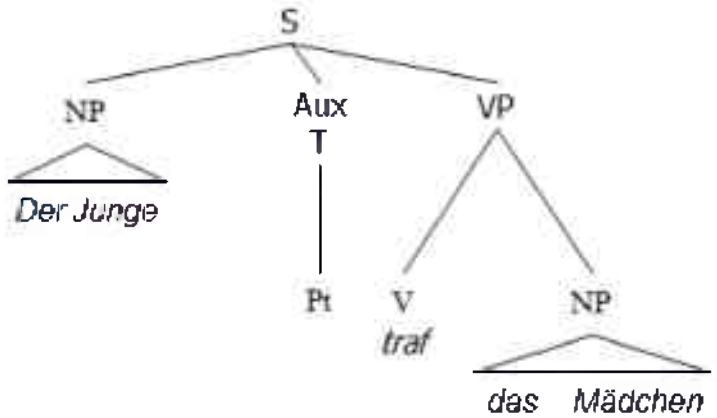
The tree in (47b) proves it true that English and Arabic are similarly represented structurally because Arabic SVO word order is similar to that of English.

Now, being richly inflected language, German Nom and Acc Cases are marked on NPs like Arabic but Arabic does not have a basic OVS. However, since German has an SVO and an OVS, it is important to consider both orders in generating a German sentence and structurally deriving it. Now, consider (48a) representing a German SVO sentence.

(48a)	*Der*	*Junge*	*traf*	*das*	*Mädchen*
	The-Nom	boy	met	the-Acc	girl

'The boy met the girl.'

(48b)



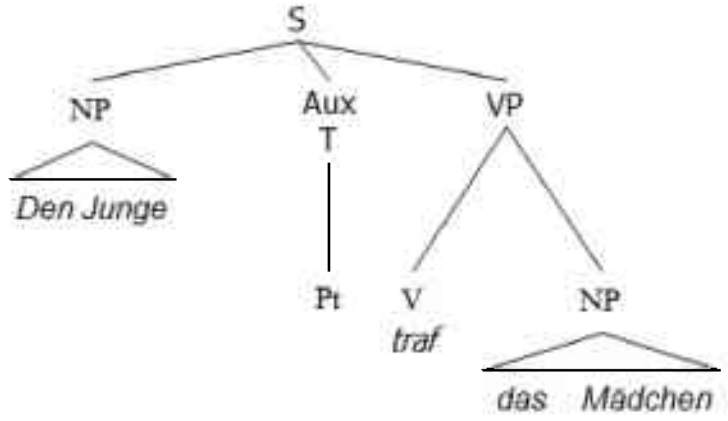
The German sentence in (48b) structurally resembles English and hence there is no problem accounting for its derivation. Now, consider (49a) which represents the German OVS sentence

(49a) *Den* *Jungen* *traf* *Das* *Mädchen*
The-Acc boy met the-Nom girl

'The girl met the boy.'

The sentence in (49a) will have the tree diagram in (49b).

(49b)



Now, comparing (48b) to (49b), they seem superfluously similar but actually not. The difference lies in two things. First, the former represents an SVO, the latter, however, an OVS. Second, in (48b), *Der Junge* (the boy) occurs to the left of the verb *traf* (met) (i.e. the subject position) and in (49b), it is the same category which occupies the subject position. However, notice that the N *Junge* (boy) occurs with the Nom definite article *Der* in the former but with the Acc definite article *Den* in the latter. In fact, *der* or *den* is not only marked for Case, it is also marked for *gender* which is in this case ***Masculine***, and even for all ϕ-features. Regarding the definite article *Das*, it is the Acc and Nom both but ***Feminine***. Thus, in German, a sentence of an SVO can be of an OVS word order provided that Case marking ***does not*** remain the same. In fact, in German, the subject can occupy the object position and vice versa but with different Case Marking, i.e. Acc and Nom, respectively and vice versa, respectively as well. In other words, the subject can ***move*** to the object position but with its Nom Case article *Der* in case of a

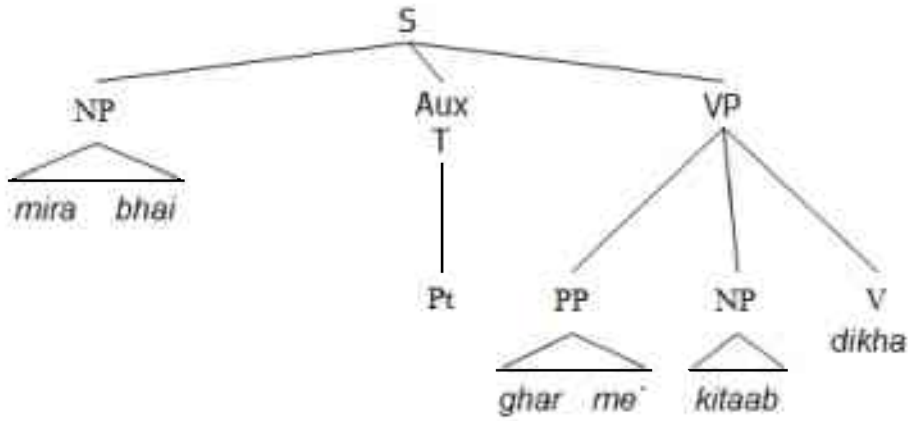
human singular and masculine subject, and vice versa as in the case of (49) above. In fact, this issue will be very clear in X-bar Theory which accounts for German OVS by means of transformations.

Now, consider (50a) which represents a Hindi sentence and its derivation tree in (50b).

(50a) *mira* *bhai* *ghar* *me`* *kitaab* *dikha*
my brother house in book saw

'My brother saw the book in the house.'

(50b)



It seems that PSRs Theory also accounts successfully for SOV word order as is clear from (50b). What really happens in (50b) is that to account for an SOV word order sentence in Hindi, the NP object *kitaab* (book) has been positioned to the left of the verb *dikha* (saw) and the PP *ghar me`* (in house) is placed to the left of the verb to render the right word order.

Thus, from the examples form different languages of different word orders, viz. VSO as in the case of Arabic, SVO as in the case of Arabic, English and German and OVS as in the case of German and SOV as in the case of Hindi, we can conclude that PSRs accounting for language variation is an adequate syntactic Theory. The drawbacks of this theory will be looked at in Chapter 8 where we discuss these problems and how they were the grains of developing a new syntactic theory of structural analysis called ***X-bar Theory***.

Summary

There is a strong relation between constituency and psychology. This relation is manifested in the way human mind perceives a piece of language. Experiments demonstrate vividly that human minds perceive only complete constituents, be they phrases, clauses or sentences. Hence, a constituent structure is so crucial to syntactic analysis. Accordingly, two relations based on such a structure have come to existence, viz. syntagmatic relation and paradigmatic relation. The former is horizontally concerned with the co-occurrence of related words in a phrase, clause or sentence. This relation can be best realized if we consider the co-occurrence of the article *an* and words beginning with a vowel sound as in *an apple* but not **an book*. The latter, however, is vertically concerned with replacement phenomenon. For instance, the slot in *the_____book*, can be filled by adjectives like good, expensive, red, big, etc. To analyze the internal structure of a constituent, PSRs Theory has been developed. This theory provides us with rules which can generate all and only the possible phrases and/or sentences in all human languages with some kind of difference, of course. Those possible sentences generated by PSRs have to be represented in tree diagrams. We have applied this theory to languages of different nature like English, Arabic, Hind and German.

Suggested Readings

For how a thorough discussion on PSRs, see (Baltin & Kroch, 1989; Borsley, 1996; Chomsky, 1957; Gazder, *et al,* 1985).

For a good deal on PSRs formulation, see (Speas, 1990; Vicente, (2007). For the problems encountered by PSRs Theory and its drawbacks in general, see (Ouhalla, 1999; Radford, 2004, 2009). For how PSRs Theory has been originated, see (Stowell, 1981).

Exercises

1. Derive the following phrases and sentences in PSRs and account for language variation. (Note: ***DO NOT*** use triangles).

I. The big book…

II. Your very answer to the question…

III.

la	*maison*	*sur*	*la*	*colline*	(French)
the	house	on	the	hill	

IV. *ʕali-un* *katab-a* *kita:b-an* (Arabic)

V. Alia's big new car…

VI. *la* *maison* *splendide…* (French)

the house splendid

VII. Musa has become very fond of syntax.

viii. yu:suf-u *?akal-a* *jamal-an* (Arabic)

VIII. To love syntax is to love Yemen.

IX. Ali really thinks that Roblah hates Tareq.

X. *Mae` eka seba khaya* (Hindi)

I one apple ate

i. To-forgive-me letters …

ii. Right down the hill…

iii. A very good response to the question….

iv. Really very fond of syntax…

v. The fact that the moon revolves around the sun…..

vi. You students are …..

vii. The big new red house in the forest…

viii. The idea that Ali should leave…

ix. The boy respects the girl very much.

x. I like to speak English.

xi. Who knows syntax well will pass today's exam.

xii. You level three students studying this year are the true builders of our beloved Yemen.

2. In the Hindi examples (50a&b), there are two phenomena:

i) The positioning and order of the modifier(s) and complement(s) with respect to the verb.

ii) The verb is not separated from its object.

iii) How could you account for these facts?

3. There is a strong relation between constituent structure and our perception of pieces of language. This proves, in a way or another, the fact that language is very systematized and organized and that human mind get on well with such systematicity and organization. Are you Pros or cons? ***Either, prove your view point supporting your answer with examples.***

4. Language variation is an existing phenomenon. Prove this statement true stating how PSRs Theory has accounted for such variation.

5. Recursion is a feature of PSRs which states that from a finite number of words and rules, we can generate an infinite number of phrases and sentences. ***Prove this statement true proving examples from English and Arabic in support of your answer.***

6. In this Chapter, we have encountered some problems and/or failures in PSRs Theory. State these problems and try to provide solutions to such problems.

7. Do the problems in **question 6** prevent PSRs to be a Theory? **Discuss.**

7 Lexicon

7.1. The Nature of Human Lexicon

In Chapter 6, we have alluded to the idea of how a piece of language is represented in our mind and how this representation is manifested onto syntax. We have also discussed how important are words in language acquisition, be it first language, i.e., our mother tongue or second language as it is the case in our acquisition of English. Now, recall from Chapter 1 that lexicon is a dictionary-like faculty (room) in our brain where all words we know about a language are stored. From a Nero-linguistic point of view, we know that our brain is divided into faculties (rooms). One of these faculties is the Language Faculty. Now, there is a subfaculty in the human Language Faculty that lexicon occupies. In Chapter 1 also, we have very briefly answered questions such as what lexicon is, what it includes, how it works etc. However, in this Chapter, things will be discussed in more detail.

7.2. Syntax and Lexicon

If our argument above is true, it follows that there is an essential relation between syntax and semantics. In fact, the relationship between these two components of the grammar is interdisciplinary due to the fact that the nature of linguistics is that we cannot separate its components from each other because there is a great interface between not only syntax and semantics but actually among all other components, viz. morphology, phonology, pragmatics etc. Now, since words are the "building Blocks" of language and in a way or another of syntax too, it turns true that we should know what a word needs to be to occur in a particular syntactic context. This is true for the fact that we usually ask ourselves why sentences like (1a&b) are not grammatical, i.e. ill-formed.

(1a) **Ali wrote*

(1b) **Alia gave a book*

Recall from Chapters 4, 5 and 6 that from a syntactic point of view, (1a) is ungrammatical due to the fact that the verb *write* has to have an NP object. The same thing can be said about the ungrammaticality of (1b) with some kind of difference, of course. The difference between (1a&b) lies in the fact that the verb *gave in* (1b) has an NP object, namely, *a book* which if used in (1a), it would have been grammatical. Though the verb *gave* in (1b) has an NP as an object, it is still ungrammatical. The reason of such ungrammaticality is that the verb *give* has to have two NPs as objects. On the other hand, to see whether what have been said is true, just try this test: there is an answer to a question regarding (1a) which is *what did Ali write?* Or simply if you hear somebody saying *Ali wrote,* the immediate question coming to your mind is *What?!* For (1b), the question is *Who did Ali give a book to?* Thus, it is clear that there is a slot (_____) being blank in both (1a) and (1b) represented in (2a&b) below.

(2a) **Ali wrote_____.*

(2b) **Alia gave _____a book*

On the other hand, there is still a question regarding the nature and type of the NP which should be put in the slot in (2a&b), viz. is it possible that we can put any word in that slot? Before answering such a question, let's consider (3a) and (3b) below.

(3a) **Ali wrote a camel.*

(3b) **Alia gave a mountain a book.*

What is going on in (3a) and (3b) above is that we have filled the slot in both with the NPs *a camel* in (3a) and *a mountain* in (3b); nevertheless both are still ungrammatical. Though from a syntactic point of view both are correct because both slots have been filled, they are still ungrammatical. If our argument is true here, then, it follows that filling the slot necessitated by syntax with any NP is not enough for a sentence to be just grammatical. It also follows that we need a particular NP to fill in the slot in (3a) and (3b) and never any NP chosen haphazardly. Thus, for (3a) and (3b) to be grammatical, only specific NPs can fit into such slots in both. For instance, in (3a) an NP can be ***selected*** from a set of lexical items including *letter, book, paper, research,* etc. The same thing can be said regarding (3b) where only an NP from a set of lexical items can be ***selected*** including *friend, Ali, Ahmed, teacher, student,* etc. The grammatical or well-formed forms of both (2a) and (2b) are presented in (4a) and (4b), respectively.

(4a) *Ali wrote a book.*

(4b) *Alia gave Ali a book.*

In fact, the ungrammaticality of the sentences in (1a) and (1b) gives us a clue that there are different classes of verbs, viz. one represented by the verb *write* and the other one is represented by the verb *give*. In the former, the verb has to have an NP to function as its object. In the latter, however, the verb has to have two NPs functioning as its objects. The obligation or the necessity of the presence of an NP in the former and two NPs in the latter is called ***Subcategorization Properties***. In addition, the ungrammaticality of the sentences in (3a) and (3b) gives us another clue that it is not true that any NP can function as an object of a verb. Moreover, it gives us another clue that every class of verbs in question has an underlying ability to ***select*** from a set of NPs only those which suit their functionality. Such ability is called ***Selectional Restrictions***. These two grammatical aspects are specific to **lexicon** which will be the main concern of ours in this Chapter touching ***very briefly*** upon ***Subcategorization Properties*** and ***Selectional Restrictions*** of three lexical classes, namely, verbs, nouns and adjectives. In addition, our concern will be limited only to complements, i.e. internal arguments. External arguments like subjects will not be included in our discussion.

72.1. Verbs and Subcategorization Properties

Syntacticians always view verbs as divided into three major classes, viz. *intransitive, monotransitive* and *ditransitive*. In fact, such classifications are not arbitrary but rather according to the underlying ability each class has in having or not having NP(s) as complement(s).[39] As has been stated above, lexicon is said to be a dictionary-like faculty in our brain which stores only and only all those words of a language (any language, be it our mother tongue or English, French etc.) we have acquired. In addition, lexicon does not only store words but also their lexical properties and features peculiar to each and every single lexis (*subhan Allah*). From this perspective, let's look how the word ***book*** as a dictionary entry is listed in ***Collins Dictionary*** in (5) below.

(5)

book:

noun

1. a number of printed or written pages bound together along one edge and usually protected by thick paper or stiff pasteboard covers

[39] This does not mean that other constituents like AP, AdvP, S, S' etc. are not possible subcategorization of verbs. In fact, Here, I use NP(s) as common constituent(s) to be subcategorized by a verb, however.

2. a. a written work or composition, such as a novel, technical manual, or dictionary

b. (as modifier) ⇒ "the book trade", "book reviews"

c. (in combination) ⇒ "bookseller", "bookshop", "bookshelf", "bookrack"

3. a number of blank or ruled sheets of paper bound together, used to record lessons, keep accounts, etc.

4. plural a record of the transactions of a business or society

5. the script of a play or the libretto of an opera, musical, etc.

6. a major division of a written composition, as of a long novel or of the Bible

7. a number of tickets, sheets, stamps, etc, fastened together along one edge

8. (bookmaking) a record of the bets made on a horse race or other event

9. (in card games) the number of tricks that must be taken by a side or player before any trick has a scoring value ⇒ "in bridge, six of the 13 tricks form the book"

10. strict or rigid regulations, rules, or standards (esp. in the phrases according to the book, by the book)

11. a source of knowledge or authority ⇒ "the book of life"

12. a telephone directory (in the phrase in the book)

Verb

1. to reserve (a place, passage, etc.) or engage the services of (a performer, driver, etc.) in advance ⇒ "to book a flight", "to book a band"

2. *tr* to take the name and address of (a person guilty of a minor offence) with a view to bringing a prosecution ⇒ "he was booked for ignoring a traffic signal"

3. *tr* (of a football referee) to take the name of (a player) who grossly infringes the rules while playing, two such acts resulting in the player's dismissal from the field

tr (archaic) to record in a book

In (5), the word ***book*** has two entries, viz. as a *noun* and as a *verb*. As a noun, it has 12 meanings listed in ***Collins Dictionary*** and as a verb it has 3 meanings. Now, our ***lexicon*** works the same way insomuch as we are interested and motived in our acquisition/learning process. In other words, you may wonder if we have all these meanings of the word ***book*** in our ***lexicon***. To answer such a question, you have to think and rethink of how your acquisition/learning process has been. Have you been interested, motivated and/or excited in your acquisition/learning process? If yes, at least three-fourth of these meanings be listed in your ***lexicon***. If not, however, maximally one meaning, i.e. number 1 in the noun entry of the word ***book***, viz. "***a number of printed or written pages bound together along one edge and usually protected by thick paper or stiff pasteboard covers"*** you could only know!! Though the word ***book*** is mainly a noun, it can also be used as a verb having the syntactic property, viz. *transitive* abbreviated as *tr* which points to its subcategorization property of having to have an NP as an object. It is neither *monotransitive* nor *ditransitive*.

7.2.1.1. Verbs Subcategorizing for no Constituent

This class of verbs does not subcategorize for any constituent because subcategorizing for a constituent is beyond its underlying ability. If this is true, it follows that they are listed in our ***lexicon*** as entries without being able to have any objects. Moreover, if we try to make them subcategorize for a constituent in a particular syntactic context, it will result in an ungrammatical sentence. Now, consider (6a,b&c)

(6a) **Ali died a dog.*

(6b) ** She stands her son.*

(6c) **I slept my friend.*

In (6a, b &c), the verb *died, stands* and *slept* are all *intransitive* in the sense that they each cannot subcategorize for an object. If this is true, it follows that what accounts for the ungrammaticality of the sentences in (6a, b &c) is the presence of the NPs *a dog, her son* and *my friend,* respectively. In English, the verb *die* cannot be used in the sense of (6a) because we cannot say *Ali died a dog.* [40]Here, the verb *died* has been used in the sense of *kill* which is not possible in English and I believe that even the Arabic verb equivalent to *die*, i.e. *maat-a* cannot be used in such a sense. Similarly, the verb *stands* cannot be used in the sense it is used in (26b). It has been used in the sense of *make someone stand* which is fain not possible in English and the same thing can be said of the Arabic verb *yaquum-u*. The ungrammaticality of the sentence (6c)

[40] This also has to do with Case assignment. In terms of Case assignment, verbs like *die, sleep,* etc. are not able to assign Acc Case to internal arguments like verbs such as *write, love,* etc.

can be accounted in the same lines. Thus, for the sentences in (6a, b &c) to be grammatical, these unnecessary NPs have to be removed. This is demonstrated in (7a, b &c) below.

(7a) *Ali died.*

(7b) *She stands.*

(7c) *I slept.*

7.2.1.2. Verbs Subcategorizing for a Constituent

Unlike the above class of verbs exemplified in (7), there is a class of verbs which subcategorize for one NP as complement. These are called ***Monotrnasitive Verbs***. As their name suggests, ***monotransitive verbs*** have the ability to subcategorize for a complement. This complement can be an NP, S or S^{I}. Such subcategorization properties are part of their syntactic abilities, i.e. encoded in the lexicon. Now, consider (8a-d) below.

(8a) **She cooked.*

(8b) **He said.*

(8c) **I tried.*

(8d) **I wonder.*

(8e) **She relies her father.*

(8f) **He goes school*

Every verb in each sentence in (8a-e) is different from the other four in each's ability to subcategorize for a constituent. For instance, the verb *cooked* in (8a), subcategorizes only for an NP. This ability excludes two NPs or an NP and any other constituent like S or S^{I}. However, it can subcategorize for S^{I} due to the fact that in English we can say *She cooked what you want.* However, note that this clause is a complement clause.[41] It cannot subcategorize for an S simply because we cannot say **She cooked you want.* The verb *say* however, can subcategorize for S or S^{I} but not for both of them at the same time. For S, we can say *He said you are a good man* and for S^{I}, we can say *He said that you are a good man* where the complementizer *that* is included in the latter but not in the former. However and as far as contextualization is concerned, the verb *tried* in (8c) subcategorizes only for an S^{I} of the *to-infinitival* nonfinite clause type. Now, you

[41] See Chapter 5 for more detail about complement clauses and how they are different from other types of clauses.

may say that you have heard sentences in ***a clothes store*** such as *Try this one!* or *Try this shoe/trousers* etc. but here contextualization plays a crucial role in the sense that what is meant here by *try this one!* is *Try to use/see this one!* However, in an out-of-context use as it is the case in this book, such a use is not acceptable. The verb *try* to subcategorize for an NP, in fact, is a spoken feature. Even the verb *say* in spoken language can subcategorize for an NP as in *He said only a word.* In addition, the verb *wonder* in (8d) subcategorizes only and only for an S^{I}. It can neither subcategorize for an NP nor any other constituent except an S^{I}, namely, conditional, be it of if-type or whether-type. To render (8d) grammatical, it has to be *I wonder whether/if you could attend syntax class.* Moreover, (8e) is ungrammatical though there is an NP, viz. *her father* due to the fact that the verb *rely* subcategorizes only and only for a PP as a complement. Thus, for (8e) to be grammatical, it ought to be *She relies on her father.* Unlike (8e), where the PP *on her father* functions as a complement, the verb *goes* in (8f) subcategorizes for a PP but functioning as an adverb(ial). Thus, for (8f) to be grammatical, it ought to be *She goes to school* where the PP *to school* functions as an adverbial of place.

7.2.1.3. Verbs Subcategorizing for two Constituents

Another class of verbs in English is the one whose verbs subcategorize for two constituents as complements. The examples in (9a-c) below illustrate this point.

(9a) **She gave a book*

(9b) **I put the book*

(9c) **They consider you.*

The sentences in (9a-c) include a different verb each. The difference is in subcategorization properties, of course. Each verb subcategorizes for two complements of different types. The verb *gave* in (9a) subcategorizes for two NPs. Now, you might sya that there are also sentences where the verb *gave* subcategorizes for an NP and a PP as in *I gave the book to Ali.* However, the verb *give* here used in what is so-called ***Dative Shift*** which is a specific syntactic construction where the indirect object shifts its position to the end of the sentence. In this case, the indirect object has to be preceded by *to.*[42] The verb *put* subcategories for two constituents but not NPs rather an NP and a PP as in *I put the book on the table. The verb consider, however,* subcategorizes for an NP and S^{I}. In fact, it can also subcategorize for two NPs but here it should be noted that these NPs are not direct and indirect objects as in the case of *give* but rather an object

[42] In fact, there is a controversy here as to whether to consider *to* a preposition or a Shift particle. However, the most agreed upon opinion is the latter.

and object complement as in *I consider you the best teacher in the world.*[43] A word of caution regarding the verb *consider* has to be said here. In fact, the verb *consider* is misused by most of nonnative speakers of English and sometimes even by native speakers who are not aware of complement restrictions using it in the sense of *regard* as in *I regard this topic as my only concern* and by analogy they produce such sentences as **I consider you as my brother* where the PP *as my brother* is used as an object complement. You have to remember that the very feature of PPs is the fact that they can never be used as object complements. Thus, as far as standard English is concerned, the verb *consider* cannot take *as+ NP* as its object complement.[(44)]

There is also a class of verbs which can subcategorize for an NP, two NPs or NP and NP/AP. In the last case, the two NPs or NP and AP are object and object complement, respectively what is called in English ***small clauses***.[45] This class can also subcategorize for an NP and S^{I} where the S^{I} is always an infinitival nonfinite clause without *to*. Such a class of verbs includes verbs like *make*. (10a-c) illustrate the issue in question.

(10a) *Alia made a sandwich.*

(10b) *Alia made Ali a sandwich.*

(10ac) *Alia made Ali happy*

(10d) *Alia made Ali eat 50 kg rice.*

In (10a), the verb *made* subcategorizes for an NP, viz. *a sandwich*. In (10b), it subcategories for two NPs, i.e. *him* and *a sandwich*. However, there are two readings. The first is that *Alia made a sandwich for Ali* and the second is that *Alia made Ali like a sandwich* in that she cut him like a sandwich. In (10c), the verb *made* subcategorizes for an NP and AP where the AP *happy* functions as an object complement. This also can be extended to two NP as in *She made him a very good man* where *him* is the first NP and *a very good man* is the second NP.

7.2.1.4. Verbs with Multiple Subcategorizations

Multiple subcategorization of verbs is a natural phenomenon in any human language. As far as Arabic and English are concerned, this phenomenon does exist.[46] In English, for instance, there is a class of verbs which can be classified into in-, mono- and di-

[43] See examples (34) in Chapter 6.

[44] See (Ouhalla, 1999; Radford, 2004)

[45] See Footnote 13 in Chapter 5.

[46] Try to use the Arabic verb *yataʕalam* (learn) in three sentences having the three uses represented by the verb *grow* in (11a-c) below and see whether Arabic exhibits ***Multiple Subcategorization*** phenomenon.

transitive in and out of context. Such verbs can subcategorize for no constituent, one constituent or two constituents such as *grow*. Now, consider the examples in (11a-c) which illustrate the point in question.

(11a) *Ali is growing (this year)*

(11b) *Ali is growing carrots (this year)*

(11c) *Ali is growing his field Indian carrots (this year).*

In (11a), the verb *grow* subcategorizes for no constituent at all. In this particular sentence, it is *Ali* who is growing and hence, receiving the thematic role of *theme* (see the below section on this topic). In (11b), however, the verb *grow* subcategorizes for an NP *carrots* receiving a Thematic Role of ***Affect*** which indicates that it is *carrots* which are growing and *Ali receives the Thematic Role of* ***Agent*** (the doer of the action). In (11c), the verb *grow* subcategorizes for two NPs, namely, *his field* receiving a Thematic Role ***Affected*** and *Indian carrots* receiving a Thematic Role of *Affect* but still it is *Ali* who receives the ***Agent*** Thematic Role. Now, we clearly see how the verb *grows* has various functions (subcategorization properties) in the three instances in (11a-c).[47]

Thus, as far as verbs are concerned, their subcategorization properties can be summarized in the subcategorization frame in (12) below.

(12)

V ⟶ X/ {]] / --- NP / 22NPs / — NP PP / ---S' / ---NP S' / ---Adv / .... }

Figure 1: Verb Subcategorization Frame (Modified from Ouhalla,1999:46)

The frame represented in (12) above is a general one where V stands for verbs, the arrow ⟶ stands for the context and X is a variable standing for the syntactic category functioning as a complement. The context ---], for instance, represents the

[47] This is called in semantics Multiple Valency (see, for example, Kreidler, 2002; Saeed, 2003; Abraham, 1978; Allerton, 1982).

Subcategorization Frame for verbs like *laugh*. The Frame NP S^{I} represents verbs like *want* as in *I want you to submit your assignment in time.* Thus, if you are to be asked to state the Subcategorization Frame for any verb, you should state one of the above frames. For instance, the Subcategorization Frame for the verb *write* will look like (13) below.

(13)

$$V \rightarrow Y / \left\{ \text{---NP} \right\}$$

7.2.2. Nouns and Subcategorisation Properties

As has been discussed above, verbs can have modifiers and complements of various categories. Now, the question is that do nouns have subcategorization properties like verbs? In fact, it is a common feature of nouns that they subcategorize for no constituent. This section, however, will focus on examining and investigating the possibility whether nouns in English could have complements and if yes, what types of lexical categories these complements are of.

7.2.2.1. Nouns Subcategorizing for a Constituent

Now, let's consider the sentences in (14a-d) below.

(14a) *the destruction of the city…*
(14b) *the answer to this question…*
(14c) *The answer to be stated here…*
(14d) *The idea that Ali is a syntax teacher…*
(14e) *Your answer being good….*

The examples in (14a-e) show that in English nouns also subcategorize for complements and of different syntactic categories. For instance, in (14a), the noun *destruction* subcategorizes for a PP, i.e. *of the city*. In (14b), the noun *answer*

subcategorizes for a PP which is *to the question*. In (14c), it subcategorizes for a *to-infinitival* nonfinite clause. In (14d), the noun *idea* subcategorizes for finite clause, i.e. *Ali is a syntax teacher*. This actually makes it clear that nouns also have subcategorization properties like verbs but there is a difference, of course. The difference lies in the fact that while verbs may have up to two constituents, nouns have only one but of different syntactic categories as shown in (14a-e) above.

The idea that Arabic verbs have subcategorization properties does exist. However, it remains unsettled whether a noun in Arabic has such properties. To examine such a phenomenon, let's consider the examples in (15a-e)

(15a) *?ijaabat-u* *su?aali-ka*

The-answer-Nom question-Gen-your

'The answer to your question.'

(15b) *?al-?ijaabat-u* *li-su?aali-ka*

The-answer-Nom to-question-Gen-your

'The answer to your question.'

(15c) *?ijaabat-u* *ma* *sa?al-ta*

answer-Nom what asked-you

'Answering what you ask.'

(15d) *fikrat-u* *?ityani-ka*

idea.Nom *coming-your*

'The Idea your coming.'

(15e) *qaḍit-u* *?an* *ta?ti-a* *mubakir-an*
The-issue to come-you early

'The issue to come early…'

(15f) *fikrat-u* *?ana-ka* *?atay-ta….*

idea.Nom *that-you* *came*

'The idea that you came'

The examples presented in (15a-f) confirm the idea that Arabic nouns have subcategorization properties. For instance, in (15a) the noun *?ijaabat-u* (the-answer) subcategorizes for an NP, i.e. *su?aali-ka* (your question). Now, you might be puzzled about the occurrence of the definite article *the* in the gloss (the-answer) while its Arabic counterpart, namely, *?al-* is not present in the Arabic noun *?ijaabat-u* (answer). In fact, the construction *?ijaabat-u su?aali-ka* (the-answer to your question) is well-known in Arabic as ***Construct State*** which is a special construction in Semitic languages like Arabic and Hebrew. In ***Construct States***, there is what is so-called ***Definiteness Spread*** where the definiteness of the complement, viz. *su?aali-ka* (your question) is spread to the whole construct and hence, the noun *?ijaabat-u* (answer) is, in principle, definite according to the argument we present here.[48].

Coming back to our main concern here, we find that the complements the Arabic noun can have are of different syntactic categories. These are an NP as in (15a), a PP as in (15b), a complement clause as in (15c), a *to-infinitival* nonfinite clause as in (15d), an *–ing infinitival* nonfinite clause as in (15e) and a finite clause, that-clause as in (15f). Now, comparing (15a-f) to (14a-e), we notice a crucial difference between English and Arabic. This difference lies in the fact that while in Arabic a noun can have an NP as a complement, it is not the case in English.

Like the subcategorization frame we provide for verbs in (12), a similar one should be provided for nouns. In (16), this frame is presented.

(16)

$$N \longrightarrow X/\left\{\begin{array}{l}]] \\ \text{--- NP} \\ \text{---PP} \\ \text{---S}' \end{array}\right\}$$

..

Figure 2: Noun Subcategorization Frame

[48] See, For instance, (Shormani, 2013b; Fassi Fehri, 1993)

The frame represented in (16) above is a general one where N stands for any noun, the arrow $\rightarrow$ stands for the context and X is a variable standing for the syntactic category functioning as a complement.

7.2.3. Adjective Subcategorizing for a Constituent

Now, there might have a question "roaming" in your mind, viz. *what about adjective?,* wondering whether adjectives have complements. Now, consider the examples in (17a-d)

(17a) *It is easy to please her.*

(17b) *Taller than his brother.*

(17c) *Ready to win.*

(17d) *Too difficult a problem.*

What the examples in (17a-d) indicate is that some adjectives cannot carry the meaning by themselves without any need for other constituents to function as their complements. Therefore, they subcategorize for other constituents to be their complements. For instance, in (17a&c), the adjectives *easy* and *ready* have a *to-infinitival* nonfinite clause each, viz. *to please her* and *to win*, respectively. In (17b) the complement of the adjective *taller* is the PP *than his brother.* In (17d) the NP *a problem* functions as a complement for the adjective *difficult.* [49]

This phenomenon is also exhibited by Arabic. Some Arabic adjectives subcategorize for a constituent as a complement. Like in English, in Arabic, too, an adjective can subcategorize for an NP, a PP, an S^{I} etc. These are called ***Adjectival Constructs***.[50] Such constructs are exemplified in (18) where the subcategorized constituent is an NP.

(18) *šaaʕir-un* *ʕaðb-un* *šiʕra-hu.*
poet-Nom charming-Nom poetry-his-Nom.
'A poet' whose poetry is charming.'

In (18), the adjective construct consists of the adjective *ʕaðb-un* (charming) and the NP *šiʕra-hu* (his poetry). The former is called the head and the latter the

[49] See, for example, (O'Flynn, 2009; Abney, 1987; Cinque, 1995; Sadler & Arnold, 1994 Pysz, 2006).

[50] See (Fassi Fehri, 1993, 2012; Shormani, 2013b; Benmamoun, 2005, among others)

complement. If we assume that the NP *ši٢ra-hu* (his poetry) is not present, the sentence will be ungrammatical because adjective *٢aðb-un*(charming) has to have a complement and this complement here is an NP.

Like nouns and verbs, adjectives also can have a subcategorization frame. This frame is provided in (19) below.

(16)

$$A \longrightarrow X/ \left\{ \begin{array}{l}]] \\ \text{--- NP} \\ \text{---PP} \\ \text{---S}' \end{array} \right\}$$

Figure 3: Adjective Subcategorization Frame

In this frame, A stands for an adjective, the arrow ($\longrightarrow$) stands for the context and X is a variable standing for the syntactic category functioning as a complement.

7.3.2. Verbs and Selectional Restrictions

While verb subcategorization properties are concerned with the number of constituents that occur to the right of a verb, selectional restrictions are concerned with the type of such constituents. In other words, selectional restrictions restrict the type of the NPs that can occur not only to the right of a particular verb but also the one which can occur to its left. Further, it is said that the verb selects its subject and object. This ability to select from a set of NPs is called ***selectional restrictions.***[51] These restrictions are part of our lexicon. Unlike the subcategorization properties which are listed in the dictionary, selectional restrictions are not listed with the verb as entries. Some linguists argue that violation of selectional restrictions goes against our senses and our world and encyclopedic knowledge. In fact, it was Chomsky (1965) who first describes ***selectional***

[51] Notice that ***selectional restrictions*** apply only to constituents other than Ss and/or S'S. In other words, if the complement of a verb is a clause, such selectional restrictions do not apply. See (20a-c) below.

restrictions as a phenomenon maintaining that such a phenomenon exists in any language. He adds that there is some kind of semantic ungrammaticality or oddity arising from violation of selectional restrictions as in (20a) below.

(20a) **Ali eats a mountain.*

where the verb *eats* needs an object (subcategorization properties) and this object can be *eaten* (selectional restrictions). However, in (20a), this is not fulfilled by the NP *a mountain*. In addition, the verb *eat* in general needs a subject which is an animate entity such as humans and animals as far as the lexical semantics is concerned. The selectional restrictions imposed by the verb *eat* on its arguments are maintained by every verb, i.e. monotransitive.[52] Here, it is worth mentioning that while subcategorization properties are concerned with internal arguments, selectional restrictions are concerned, with both external and internal agreements of the verb. This actually makes selectional restrictions different from subcategorization properties. In (20a), though the subject of the verb eats, i.e. *Ali* receives a ***Thematic Role*** of an Agent, its object fails to receive a ***Thematic Role*** of Affected because *a mountain* cannot be *eaten* and hence, failing to receive the role of affected assigned by the verb *eat*.

(20b) **The book laughed.*

In (20b), the NP *the book* violates the selectional restrictions imposed by the verb *laugh*. However, this time it is on the subject *the book*. This is so simply because the subject *the book* cannot be assigned a thematic role of ***Actor***. In fact, these selectional restrictions are imposed by verbs on their NP arguments.[53] Sentential arguments like S and S^{I}, on the other hand, are not subjected to selectional restrictions. Verb arguments are always said to be referring expressions which are in turn NPS. This point is illustrated in (20c) below.

(20c) *He eats what the mountain gave him.*

Here, S^{I} *what the mountain gave him* does not violate selectional restrictions, however, due to the fact that what the mountain gives may be something edible, fruits, for example, like *apples, pineapples*, etc., grains, like *wheat, barley*, etc. or even vegetables like *carrots, tomatoes, potatoes,* etc. In addition, *animacy* is a very crucial feature for the subjects of verbs like *eat*, *drink, meet, laugh, sing, buy* etc. Thus, every verb imposes certain features on its arguments, be it internal or external. To think of

[52] Internal argument refers to the object of the verb and external one refers to its subject.
[53] See Footnote 51

what makes this so, I suggest to think of the verb properties and features encoded on it. Now, consider (20d) which shows an oddity caused by the selectional restrictions of the verb *wash*.

(20d) **I found an orange washing in the river.*

In (20d), it is the violation of the selectional restrictions imposed by the verb *wash* which causes the semantic or lexical ungrammaticality.

However, sometimes the selection of arguments can vary depending on the verb. Consider the examples given in (21a-c) illustrating this phenomenon.

(21a) *The dogs are drowning.*

(21b) *The sparrows are drowning.*

(21c)**Honesty is drowning.*

In (21a&b), the verb *drowning* selects the NPs subjects, namely, *the dogs* and *the sparrows,* respectively, and there the problem is imposed. However, in (21c), the issue is different due to the fact that the NP *Honesty* cannot function as the subject of the verb *drowning*.

In addition, there are some verbs which can have only one single type of NPs. No other types of NPs can function as their subjects. Consider (22a-c) exemplifying such verbs.

(22a) *The dog barks.*

(22b) **The sparrow barks.*

(22c) **Honesty barks.*

(22a-c) show that the verb *bark* can have only the NP *dog, and no other NP of whatever type it is*, can function as its subject, let alone animacy. The NP *the sparrow* though being animate cannot be selected by the verb *bark,* let alone the NP *Honesty* which is not. If we look at the thematic role assigned to the subject by the verb *bark*, we find that it is an ***Actor***. The role of an ***Actor*** does not entail the presence of a ***Theme***, ***Affected***, etc.

Moreover, there is a class of verbs which have to have two arguments (subcategorization properties and hence, assigning two thematic roles to them (selectional restrictions). In fact, verbs in this category are viewed to be synonymous. Now, consider the examples in (23a-c) which illustrate this issue.

(23a) *Ali drives a car.*

(23b) **Ali drives a bike*

(23c) *Ali rides a bike.*

In (23a), the verb *drives* imposes a selection restriction on its internal argument, i.e. *a car*. This is clear from (23b) where it (*drives*) cannot take an NP like *bike* to be its internal argument. With verbs like *drive*, *car* can receive its ***affected*** thematic role whereas *bike* cannot. This is due to the fact that the English verb *drive* assigns a thematic role only to a locomotion vehicle which has to have more than three wheels. In (23c), however, the verb *ride* assigns a thematic role, i.e. Affected to locomotion vehicle which has only two wheels like *bike, bicycle* etc. In addition, the verb *ride* can assign a thematic role to NPs like *horse, donkey* etc.

There is also a class of verbs whose subjects must be human. This class includes verbs like *pray, recite, study, memorize, think, consider, believe,* etc. Now, consider the examples in (24a-c) presenting how such a class works.

(24a) *Ali studied mathematics.*
(24b)* *The cat studied mathematics.*
(24c)**The house studied mathematics.*

In (24a), the sentence is grammatical simply because it is only human beings who can study. In addition, the verb assigns a thematic role of Agent to its human external argument and Affected to its internal argument. If our argument is true, it follows that the NP *the cat* though being an animate entity cannot be assigned the thematic role of Agent by the verb *studied*. In (24c), the NP *the house* being not only inanimate but also inhuman violates the selectional restrictions of the verb *studied*.

There is a class of verbs whose both internal and external agreements must be both human. This class includes verbs like *meet, marry* etc. Looking at the examples given in (25a-c) gives you an obvious clue in this regard.

(25a) *Ali met Alia.*

(25b) **Ali met the car.*

(25c)**The car met the bike.*

In (25a), the sentence is lexically grammatical simply because the verb *met* has two arguments which can receive the thematic roles assigned by it. These arguments are *Ali*

and *Alia*, external and internal, respectively. In (25b), the verb *met* fails to assign its thematic role of Affected to the NP *the car* though it has assigned a thematic role of Agent to its external argument *Ali*. In (25c), both argument, namely, *the car* and the *bike* could not receive the thematic roles, viz. Agent and Affected, respectively assigned by the verb *met*.

With this, though little in mind about selectional restrictions, I think it is worth making clear an important issue regarding the conceptualization we have on the violation of selectional restrictions of verbs as has been discussed above. The examples discussed above show that violating selectional restriction imposed by verbs on their arguments lead to ungrammaticality. However, it is true that we encounter a lot of spoken and even written English involving sentences like (26a&b).

(26a) *Ali has eaten syntax book out in one day.*

(26b) *Honesty spoke in him suddenly.*

Now, it seems that the examples in (26a&b) are grammatical because there is no asterisk * as has been our convention that we put such an asterisk before an ungrammatical sentence. However, this does not mean that we have changed our mind regarding the violation of selectional restrictions imposed by the verbs *eat* and *speak* on their arguments. Now, to understand what is going on in these two examples, we have to understand what it means by each of them and why they are used. What is meant by the sentence in (26a) is that *Ali has studied and understood the whole handout in one day*. Regarding when it is used, we have to think of the situation. In fact, such a sentence is used when one knows that Ali has not studied anything in the syntax book, you might have asked him some questions and he was not able to answer. However, second day, you ask him the same questions but he answered them and hence, in this situation, you say the sentence in (26a). The same thing can be said about the sentence in (26b). In that, suppose someone is known to be dishonest, i.e. he/she always lies, for instance, and one day he for some reason tells you the truth about something, then you will say the sentence in (26b). Now, if our argument is true, then it follows that both sentences, viz. (26a&b) are not used in their literal meaning (lexical meaning) but rather in their nonliteral meaning (metaphorical meaning).

Our above argument leads us to the fact that we use language not only to express literal meaning as a way or a system of communication. Language is also used to express meaning which is beyond literal meaning. This use actually is needed when we want to exaggerate, emphasize metaphorize etc. the use of any piece of language.

There is also another use of language conveyed by "fixed expressions" where literal meaning is not what is supposed to be at first glance. Such a use is best manifested in the use of like idioms or proverbs. The examples given in (27a&b) demonstrate this point.

(27a) *He pours his grief to me*

(27b) *Actions speak louder than words.*

Though the verb *pours* is not suitable to be used with *grief,* because it needs some kind of container and something contained to be *poured*, the sentence is still ungrammatical. Thus, in (27a), the idiom *pours his grief to* has been used in its nonliteral sense or meaning (Soehn, 2005). In fact, this idiom is said when someone is sad because of some reason and when someone else tries to speak with him/her, he/she overreacts, i.e. reacts in an abnormal way which is not expected. In (27b), i.e. the proverb *Actions speak louder than word,* the verb *speak* requires a human and only human subject to who it assigns a thematic role of Agent which is not the case in (27b) because actions cannot *speak*. However, this proverb is said to someone who exaggerates in describing the self or the deeds he/she has done. In fact, there is also a moral lesson in this proverb. It actually teaches us how to make our deeds (actions) tell others about us and about what we are doing and stop self-praise because it is just a lie and lies never hide!!

There are also some linguists who propose that selectional restrictions do not always lead to grammatical pieces of language. Chomsky, for instance, argues that we can make an ungrammatical piece of language a grammatical one by negating it, using modals, conditionals and making questions. Therefore, we can conclude that selectional restrictions depend heavily on contextualization and thus, it is to some extent not true that selectional restrictors always result in an ungrammatical piece of language and that what we have to get from selectional restrictions imposed by verbs and other lexical categories is that an utterance is deemed odd or ungrammatical if and only if we have in mind the literal meaning of such an utterance simply because meaning as a natural phenomenon is not always expressed in a straightforward manner. Sometimes, *we mock, we satirize, we metaphorize, we personify, we stigmatize,* etc. This also gives us a clue that sentences like *Someone barks!* is not ungrammatical if we just get ourselves out of the literal use and/or meaning of such a sentence and know that the utterance *Someone barks!* is said in a situation such that there is someone and he/she is speaking ill to and/or about us!!

7 Lexicon

Summary

Every human is gifted with a dictionary-like organ located in his/her brain. This organ is called lexicon. Lexicon contains all the words we know about a language, be it our mother tongue or any other language. every word is listed and/or stored with its features which make it different from others. The features listed with each entry (lexis) are related to the specifications encoded in the accompanying words it co-occurs with and those which it has to co-occur with. The former is called selectional restrictions and the later subcategorization properties of such a lexis. In the later, some Vs, Ns, As, etc. have to have constituents of different lexical categories to complement their meaning. In the former, however, these Vs, Ns, As, etc. choose lexical categories depending on the specifications encoded onto them. Thus, lexicon is so much essential to syntax simply because the former provides the latter with the words the latter needs.

Suggested Readings

For a comprehensive review of lexicon see Miller (2002; Schachter, 1984; Valin, 2004) There is a good deal on subcategorization properties and selectional restrictions in (Ouhalla, 1999). You can also read (Saeed, 1988; Kreidler, 2002; Rosenbaum, 1967; Williams, 1994) for a thorough discussion on Thematic Roles.

For more on adjectival and nominal complementation, see (Pysz, 2006; Rosenbaum, 1967; Ritter, 1991; Shormani, 2013b, in prerss).

Exercises

1. **Identify the ungrammaticality of the following pieces of language: (Note: stating the reason of such ungrammaticality in *one* sentence could suffice.)**
   i. *This is the man eats an apple.
   ii. *I really consider you as my brother.
   iii. *My father put the book.
   iv. *Although you study hard.
   v. *The her ring.
   vi. **?akal-a ?aħmad-un tufaħt-un* (Arabic: Ahmed ate an apple.)
   vii. **Der Mann Sah Der Hund* (German: The man saw the dog.)

2. Lexicon is said to be a dictionary-like organ every human is endowed with which contains lexes (words). ***State why we should include such a dictionary in a book of syntax like the one you are reading.***

3. State where each of the following is acceptable and/or lexically grammatical.

i. *He barks today.*

ii. *She poured her anger to me.*

iii. *I have eaten this book completely.*

iv. *wallahi la ?ašrab min damak*

v. *lait wallah wal?aiaam θwaani*

vi. *qad ?akalat θawr*

vii. *I met the car.*

viii. *The book spoke to me.*

ix. *I married an elephant.*

x. *I married an angel.*

4. Multiple subcategorization is a linguistic universal. ***Prove this statement true providing examples from Arabic in support of your answer.***

5. Write the subcategorization frames of the following verbs describing such frames on the basis of their selectional restrictions:

i. *go, relay, depend, spend*

ii. *laugh, die, cry, weigh, sound*

iii. *try, want, learn, teach, study*

iv. *believe, say, think, wonder, consider*

v. *get, grow, feel, look, make*

8 X-bar Theory

8.1. Syntax as a Scientific Discipline

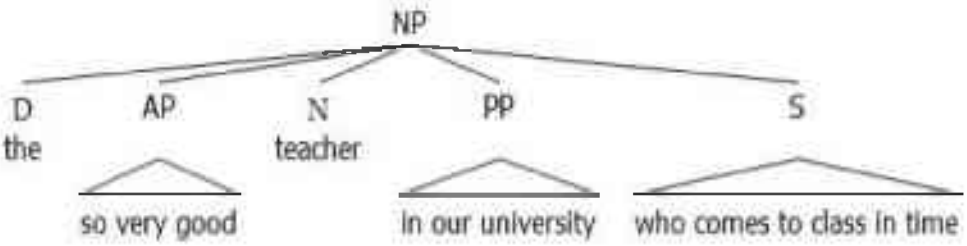
The idea that syntax is a scientific discipline has widely been proved true by a considerable number of linguists. Such linguists based their arguments on the fact that whatever they prove as a theory ends up with problems arising due to language variation phenomenon, i.e. languages are not the same and do not operate similarly. In fact, human languages belong to different families like Semitic, Indo-European, Dravidian and so on. Thus, if a theory in a state of development was found unable to be applied to a language, such a theory has to be revised, rethought or modified. However, if a theory fails to accomplish certain features, i.e. it is not adequate for certain properties of a language or does not meet new discoveries in syntax theorization, syntacticians keep studying, investigating and/or examining the application of such a theory to some other languages. This proves that syntax is a scientific area of study and investigation. As we have seen in Chapter 6, the theory of constituent structure we have developed, namely, PSRs has been called so due to the fact that it has been applied to other languages though in our case only Arabic, Hindi and German are involved. However, we have concluded that it is a theory because of such an application regardless of the failures and problems later discovered by syntacticians about and within it.

8.2. X^{I} Theory

From a syntactic perspective, among the problems and drawbacks of PSRs as a theory is leveling all the constituents constituting a phrase, clause or sentence equally. In other words, given a constituent, let it be an NP or S, in the derivation tree, all elements of such a constituent are put at the same level. For this point to be clear, consider the PS rules and the tree diagrams in (13a&b) for NPs and (27b&c) for Ss in Chapter 6 reproduced here as (1a&b) and (2a&b), respectively.

(1a) NP ➔ (D) (AP) N (PP) (S)

(1b)

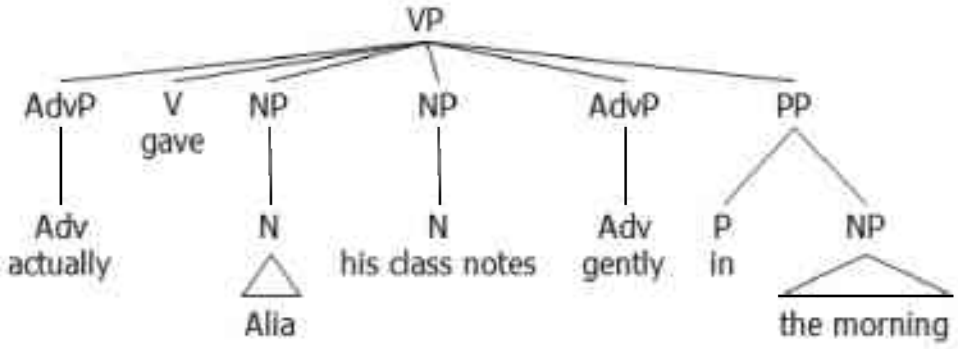


The rule in (1a) generates NPs like *the very good teacher in our university who comes to class in time* and derivation trees like (1b). What can be noticed here is that all constituents constituting the NP *The very good teacher in our university who comes to class in time* come or are placed at the same level, i.e. all of them are connected to the node NP. Though the tree seems grammatical because the output of the whole NP does not violate English syntax, such leveling was considered a problem specifically to those NPs which have complements and modifiers as will be illustrated in (15) below. This leveling can be said to be *flat structuring*. *Flat* in the sense that all constituents are *flat* with respect to the head N, i.e. *teacher*.

In addition, at the sentence level, the rule in (2a) will generate sentences like *Ali actually gave Alia his class notes gently in the morning* and derivation trees like (2b).

(2a) **S** ➔ NP (AdvP+) V (NP) (NP) (AdvP+) (PP+)

(2b)



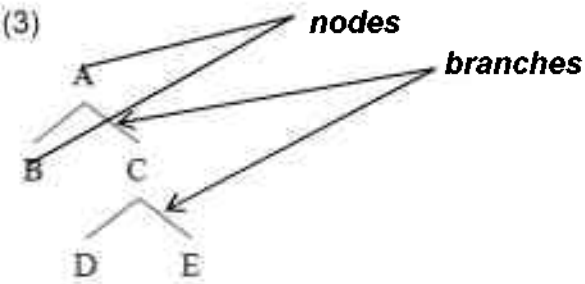
Now, if we reconsider the leveling of such elements in the derivation tree, it could be said that this leveling is "unfair." This is due to the fact that it equalizes a modifier of the verb *gave*, the Adv *gently,* for instance, to its complement NP, *his class notes*. Thus, syntacticians do not accept equalizing a modifier which can be removed to a complement which cannot be.

Another failure PRSs Theory comes up with concerns semantics. For instance, the fact that a rule like (2b) generates Ss like *Ali gave Alia a mountain* which, though syntactically well-formed, is not semantically so as has been seen in chapter 7. These drawbacks or failures result in developing a new syntactic theory called ***X-bar*** (reads ***iks bar***).[54] However, this does not mean that PSRs is totally wrong and useless. It is good enough to think of this theory as the source which ***X-bar*** theory has been arising from. Thus, before briefly probing ***X-bar*** Theory, there are some preliminaries that have to be looked at in this moment.

8.2.1. Tree Diagrams and Terminology in X' Theory

In Chapter 6, you have encountered tree diagrams practicing drawing them but without knowing many facts about such trees. We need to define what a tree diagram is. In fact, a tree diagram can be simply defined as ***a body having a branching structure similar to that of a tree***. Now, consider the abstract tree diagram in (3).

(3)



From the abstract tree diagram presented in (3), there are several facts to be drawn. For instance, this tree consists of nodes and branches you should understand what is meant by a node and a branch. Now, looking at the tree in (3), it is easy to figure out what is meant by a *node*. A node can be defined as *a point such that it initiates a branch or ends it*. For instance, the node A in (3) is the

[54] In principle, X' Theory has been introduced by Chomsky's (1970) ***Remarks on Nominalization***. It has also been further developed by Jackendoff (1977).

beginning of the two branches, namely, A---B and A---C. A branch, on the other hand, *is a line connecting two nodes.* For example, A---B is a branch and C---E is another branch (try to figure out the other nodes and branches in (3)).

8.2.2. Binary Branching

In Chapter 6, there were more than two branches coming out of a node. Looking at the trees in (1b) and (2b) proves this true. However and as far as ***X-bar*** Theory is concerned, there have to be ***only and only two branches*** coming out of a node. A tree structure as will be seen later on in this Chapter resembles the abstract tree in (3) in its immediate structure. Thus, *Binary Branching* can be simply defined as *a process in which only two lines come out of one single node.*

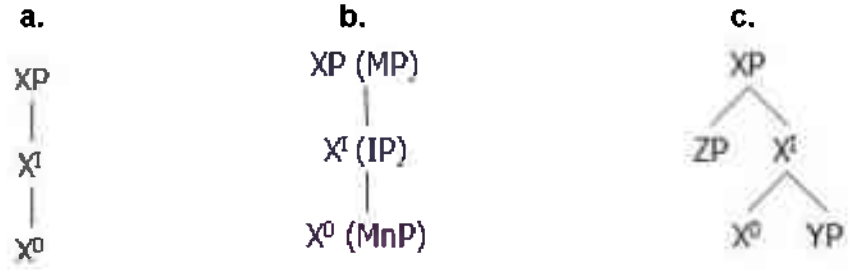
8.2.3. Motherhood, Daughterhood and Sisterhood

These are three structural relationships among nodes. Now, to understand what is meant by the term ***motherhood*** in a particular tree diagram, look again at the abstract tree diagram in (3) above which demonstrates this relationship very clearly. The node A is called a mother to the nodes B and C, and C is a mother to the nodes D and E. Motherhood-Daughterhood relationship can be seen between A, and B and C in such a way that B and C are daughters to A (there is still another daughterhood relationship among three other nodes, try to figure it out). The relationship of ***sisterhood*** can be best realized by considering the nodes B and C (there is also another sisterhood relationship between two other nodes in (3), try to figure it out) these relationships are very crucial to ***X-bar*** Theory in identifying the relationship between a head and its modifiers and complements.

8.2.4. X-bar Schemata

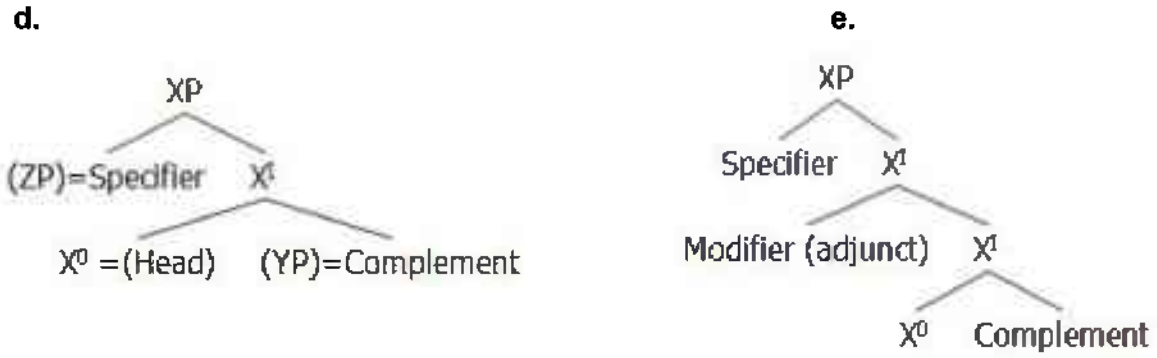
As a preliminary step before generating sentences and tree diagrams in this theory, there are certain rules we have to consider. Now, consider the tree diagrams given in (4a-e) below.

(4)



As can be seen in (4a), there are three levels in ***X-bar schema***, viz. the phrase level XP, the intermediate level X^{I}, and the initiative level X^{0}. What each level represents is manifested in (4b) where the XP represents a maximal projection, the X^{I} represents an intermediate projection and the X^{0} represents the minimal projection of a phrase.[55] In (4c), the XP is a phrase where X is a **variable** (it can be N, P, A, etc.), the ZP is called ***Specifier***, usually shortened as **Spec** (it can be article, possessive, cardinal number (e.g. one, two, three, etc.) or ordinal number (e.g. first, second third, etc.), qualifier (e.g. all, some, every, etc.), the X^{I} is an intermediate projection, the X^{0} is the **Head** and the YP is the **complement** of the **Head**.

A very important fact to be noticed is that the ZP (**Spec)** is a sister to X^{I} and the YP (**complement**) is a sister to X^{0} (**Head**). This is demonstrated in (4d).



Another very important fact about ***X-bar*** Theory is that a modifier is a sister to X^{I}. This is demonstrated in (4e). In fact, the schemata given in (4d) and (4e) are considered the core of $\mathbf{X^{I}}$ Theory. The adjunction of specifiers and modifiers to X^{I}

[55] What is meant by projection is the branches and nodes into which a phrase or even a node is analyzed. For instance, in (3) the node A projects into B, C, D and E.

level represents not only the core of this theory but also a radical departure from PSRs.

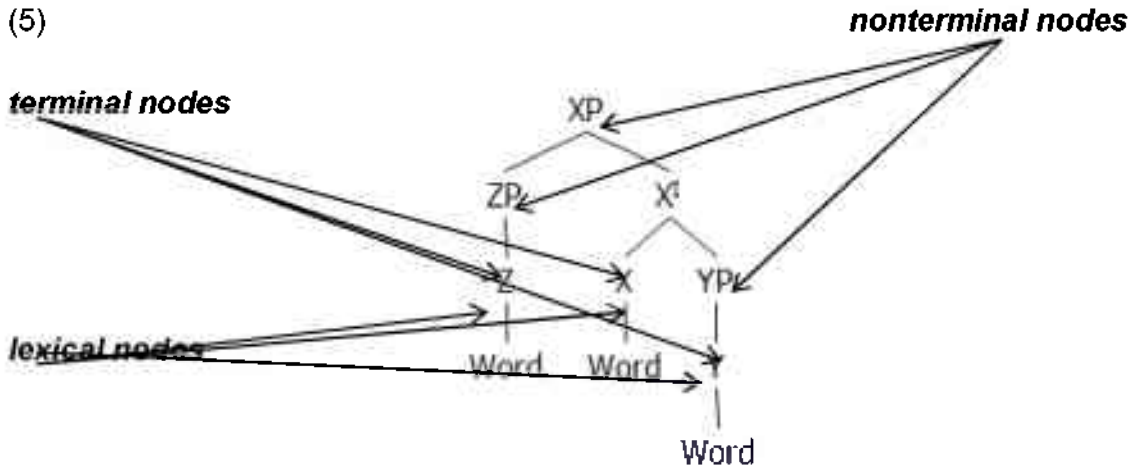
The most important thing to be noticed in X-***bar*** Theory is the fact that tree diagrams are structured according to levels. These levels can be extended as far as the length of a particular phrase permits. On the other hand, it is also true that PSRs Theory has been of some value due to the fact it has given great importance to the representation of phrases in a hierarchal order though it fails to account for certain facts in such an ordering. ***X-bar*** Theory takes the language to consist of phrases, clauses and sentences formed in hierarchal ordering pertaining to the universals of human languages. In other words, ***X-bar*** Theory puts things in order and proves that linguistics is a scientific discipline. It is actually one of the principles of Universal Grammar shared by all natural languages as will be seen in subsequent sections of this Chapter.

Thus, according to ***X-bar*** Theory, a phrase, be it an NP, AP, PP, S, etc. consists of three levels. The first is the maximal projection represented by XP where X is a **variable** (it can be N, A, P, etc.) and P indicates Phrase. The second is the intermediate projection to which other ***peripheral*** (secondary constituents like specifiers, modifiers and adjuncts) are adjoined. The third and last is the minimal projection to which ***non-peripheral*** (important constituents like complements) are adjoined.

8.2.5. Projection in *X-bar* Theory

As has been stated above, phrases are hierarchically ordered and that ***X-bar*** Theory comes to systematize this ordering giving any phrase three levels, viz. maximal, intermediate and minimal projections. As far as XP (where X is a variable) is concerned, it projects into X^{I} and X^{0} where the former is an intermediate projection and the latter a minimal projection. If this is true, it follows then that rules in PSRs Theory will undergo a radical change for NPs, APs, PPs etc. When an XP (whatever the X is) projects, we have to understand some further terminology of nodes. In that, we have to differentiate among three terminals. Now, consider the abstract tree in (5).

(5)

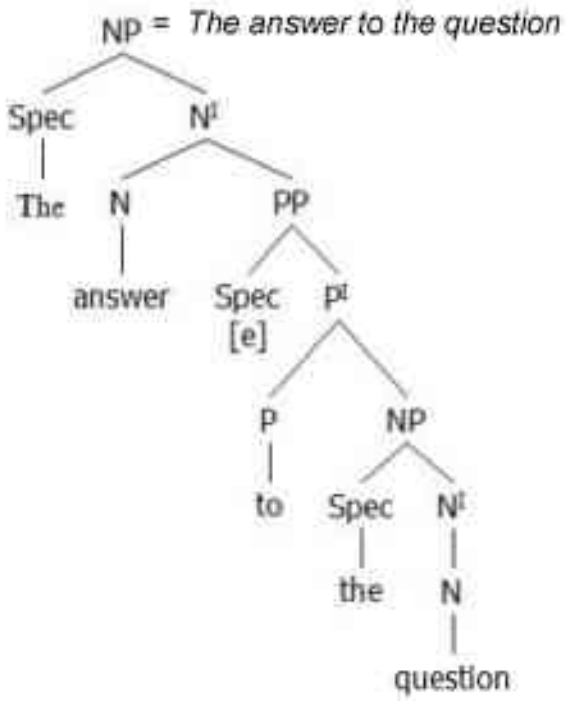


In (5), there are three different types of nodes. The first is nonterminal nodes represented by XP, ZP and YP. The nonterminal nodes project into the second, viz. the terminal nodes represented by Z, X and Y, respectively. These terminal nodes project into lexical nodes which are the actual words. Now, let's consider (6a&b) showing a concrete example for NPs and note how NPs are derived and represented in **X' Theory**.

(6a) *The answer to the question.*

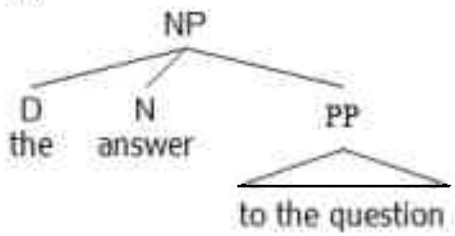
In (6a), the phrase is an NP where the possessive *my* is a specifier, the N *answer* is the head and the PP *to the question* is a complement of the head. Now, note how this NP is derived in (6b).

(6b)



Now, notice how the NP *The answer to the question* is derived in (6b) according to X^{I} Theory. Notice also the way leveling has been done. If you want to make sure of understanding how X^{I} Theory derives NPs and how it differs from PRSs in that, compare (6b) to (15c) in Chapter 6 reproduced here as (7) which is a tree representing the same NP.

(7)



There is actually a huge difference between the two. In (7), there is no distinction between the specifier *The* which is a type of modifier and the *PP to the question* which is a complement. In PSRs, there is no difference between a specifier and a head, and between a head and a modifier and/or a complement. This is clear in (7) where the three constituents are represented at the same level, i.e. in ***flat structure***. However, in (6b), X^{I} Theory makes a huge difference which is best seen

in the hierarchal order in the derivation tree in (6b). The specifier *my* is a sister to N^{I} and the complement, i.e. the PP *to the question* is a sister to the head N *answer*. The PP *to the question* also projects into the head P *to* and the NP *the question* which in turn projects into a **Spec** *the* and the head N *question*.

In addition, sometimes, there are no constituents present in the structure of a phrase. These constituents are either represented as ***empty*** or projected into other immediate constituents without any further details. In (6b), for instance, the former is represented by the [e] in the **Spec** of the PP because there is no specifier in this case and the latter is represented in the projection of N^{I} of the NP *the question* where there is a specifier, viz. *the* of the head N *question*. In this case, the N^{I} projects into N which in turn projects into the lexical item *question*. The *e* in [e] stands for ***empty*** as represented in the **Spec** of PP in (6b).

8.2.6. Drawing a Tree Diagram

As we have seen in Chapter 6, there is a convention for drawing tree diagrams. It was not so much problematic to draw a tree diagram in PSRs for the fact that there are no constraints as there are in X^{I} Theory. As we have seen in this theory, there are three basic levels and projections. However, there are some basics for drawing trees seen in Chapter 6 that will be of some kind of value here as well. Thus, in this section, we will tackle the way in which trees are drawn according to X^{I} Theory conventions and constraints. The following essential rules must be considered before drawing a tree in X^{I} approach.

i) The first thing you have to consider is that there must be THREE LEVELs and consequently THREE PROJECTIONs for any given phrase.
ii) In a given phrase, you have to identify the constituent type, i.e. whether it is an NP, an AP, a PP, an S, etc. This will make you able to start the first node in a tree.

iii) You have to identify which constituent is a specifier, which is modifier and which is a head. This will allow you to determine which constituent is a sister to which constituent. For instance, a specifier is a sister to X^{I} (again X could be N, A, P etc.). A modifier is a sister also to X^{I} and a complement is a sister to the head X.

iv) In a given phrase, there is ***one and only one specifier***. However, there could be more than one modifier. When you map constituents on the tree, start out with the very closest modifier to the head, then the second closest and so on. A Specifier has to be attached to X^{I}, and do the same with respect to modifiers

because specifiers and modifiers are sisters to X^{I}. Finally, attach the complement to the head X^{I}. For ensuring these details, see X^{I} **schemata** in (4) and the tree derivation of the NP in (6b).

v) Recall from our previous discussion that as far as NPs are concerned, specifiers and modifiers are considered adjuncts simply because they can be removed and in terms of X^{I} Theory, they are peripheral constituents (sisters to X^{I}). However, Specifiers are a ***must*** in Ss because they are ***subjects***. All in all, adjuncts are sisters to and must be attached to X^{I}.

8.2.7. Adjuncts and Complements

Adjuncts and complements are very much crucial to X^{I} Theory due to the fact that they constitute an essential part in the construction of grammatical and meaningful pieces of language. As has been sated earlier, the presence of adjuncts of any constituents (grammatical categories) is not necessary in a given piece of language, be it a phrase, a clause or a sentence. However, complements are considered so much important constituents which cannot be removed from a phrase, clause or sentence. On the other hand and as far as structure is concerned, adjuncts are said to be sisters to X^{I}, i.e. an intermediate level initiated in this theory for that purpose and complements must be sisters to the head X^{0}.

Now, bearing in mind the points given in the section above, we can derive and represent the structure of any given constituent in general and NPs in particular whatever their length is. According to X^{I} Theory, the XP presented in (4) can be reformulated in a general rule presented in (8) below.

(8a) XP➔ (ZP) X^{I}

(8b) X^{I} ➔ X^{0} YP

where ZP is Spec and YP is a complement. X^{0} (where X is a variable, i.e. it can be an N, P, V, etc.) projects into a lexical category, i.e. an N, P, V, etc. This is shown in (9) below).

(9) X^{0} ➔ N/P/V/A/Adv (where " / " stands for only one choice)

Now, bearing this in mind, NPs in terms of X^{I} Theory can have the rule presented in (10) below:

(10a) NP➔ (Spec) N^{I}

(10b) N^{I} ➔ (mod) N^{0} (com) (mod)

where Spec(ifier) is D and mod(ifier) could be an NP, AP or S, etc. and com(plement) could be an NP, PP or S. Let's begin with NPs and see how X^{I} Theory accounts for their generation and how such generation can be structurally represented in the form of tree diagrams. Now, consider the NP in (11a) and its phrase marker in (11b) below.

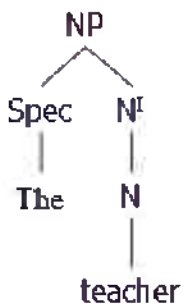
(11a) *teacher*

(11b)

In (11b), there is only one item, i.e. the head N *Teacher.* Consider (12a) and its phrase marker in (12b) representing the head N *teacher* with the Spec *The.*

(12a) *the teacher*

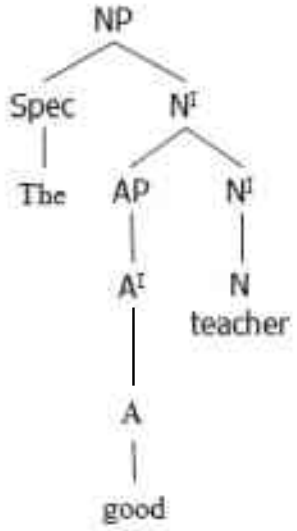
(12b)



In both (11b) and (12b), there is no modifier. Only a specifier and a head are there. Now, consider (13a) which is an NP with an AP as its modifier in (13b).

(13a) *the good teacher*

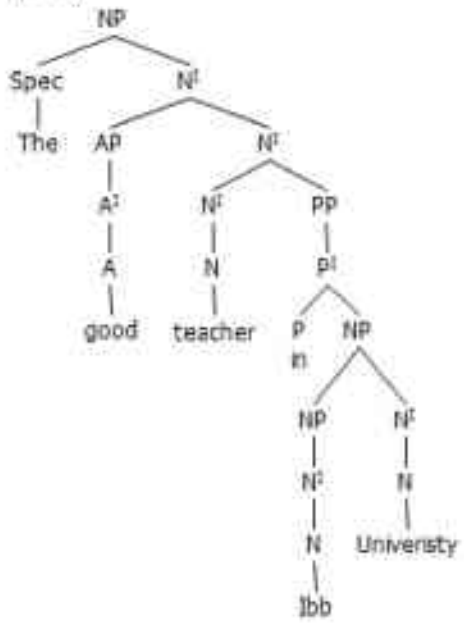
(13b)



Note here that the modifier AP *good* is a sister to the N' as is the Specifier *the*. The AP subjected to X' structure projects into A', which in turn projects into A which also projects into the lexical item *good*. Now, consider the same NP but with the premodifier AP *good* and the postmodifier PP *in Ibb University* in (14a) and its tree diagram in (14b).

(14a) *The good teacher in Ibb University*

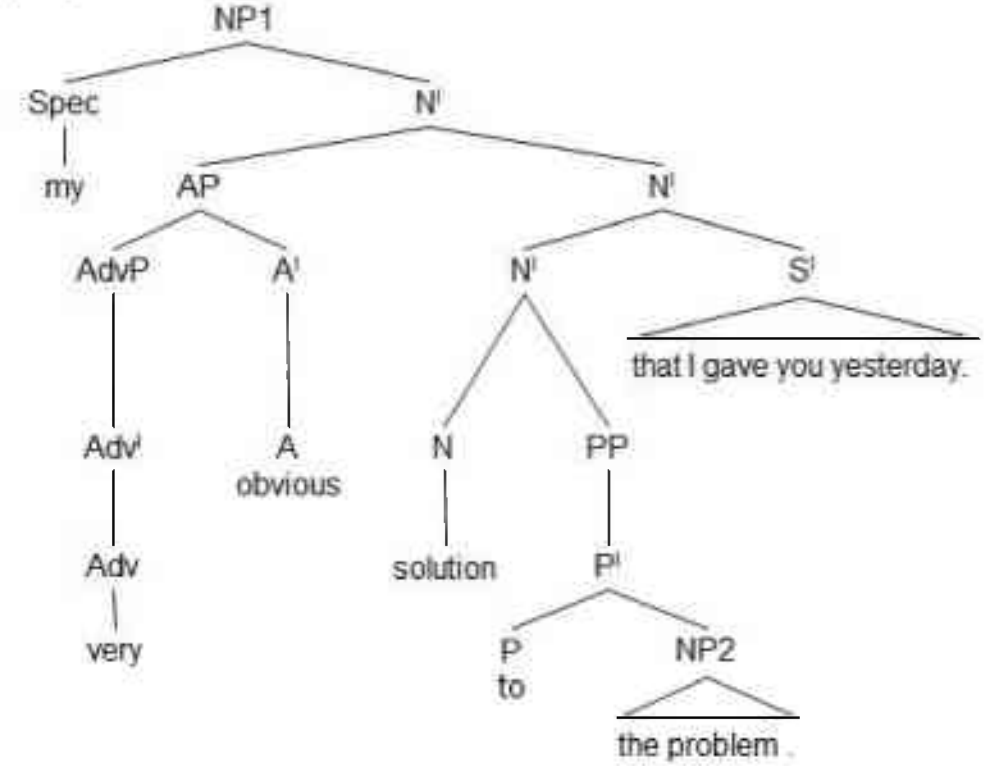
(14b)



Note here how the Spec *the*, the premodifier AP *good* and the postmodifier PP *in Ibb University* are all adjoined to N^1s. Note also how the NP *Ibb* is adjoined to N^1 of the lower NP because it is a premodifier. In a lengthier NP where there are more than one modifier and of different types, there is a convention of putting numbers like 1, 2, 3, etc. to distinguish the upper from the lower ones. This will be shown in our coming trees. Now, consider (15a) which is to some extent lengthier and its derivation tree in (15b).

(15a) *My very obvious solution to the problem that I gave you yesterday.*

(15b)



The NP *My very obvious solution to the problem that I gave you yesterday* represented in (15b) is to some extent lengthier than the previous ones. Now, note here how X' Theory accounts for such NPs in a very systematized way. The modifiers, be they pre-or post- ones, namely, the Spec *the*, the AP *very good* and S' *that I gave you yesterday* have been all attached to N's. Moreover, the AdvP *very* which is a premodifier of the AP has been attached to A'. The PP *to the problem* however, being the complement of the head N *solution* has been attached to the head N *solution*. In fact, all these details, though somehow complicated, are considered the cornerstone of an adequate syntactic analysis. X' Theory makes things systematized and more accurate and accounts for facts in a logical way.

Though what has been discussed above is concerned with analyzing NPs, other constituents like APs, PPs, AdvPs have been tackled indirectly. You must have also noticed that PPs, APs and AdvPs have been analyzed without paying attention to their Specs. It is ok, however! I have not been much concerned with these rather details simply because they do not show up in the tackled constituents and hence, in their phrase markers. If *you* intend to include them in your derivations, you can simply initiate their nodes and represent them with [e].

However, what has to be tackled in details is S and S^{I} due to the fact that they are considered the main scope of any adequate syntactic analysis. However, before tackling the S^{I}, we need to see how X^{I} accounts for S. This will be our main concern in the next section.

8.2.8. X^{I} Theory and Non-lexical Categories

In Chapter 5, we ended up with a very important conclusion that from a syntactic point of view, what makes a piece of language a sentence is having a finite verb and that for a verb to be finite, it has to have a tense on the one hand. On the other hand, this tensed verb has to be functionally linked to a subject occupying the subject position in the sentence. From a semantic point of view, this subject is an entity being able to be assigned a thematic role by the verb. Now, coming back to the tense and verb, we all know that tense is represented by inflection on the verb. Now consider (16a, b &c).

(16a) *John play**ed** tennis.*

(16b)	*ʕali-un*	*ʔakal-**a***	*tufaaħat-an*	(Arabic)
	Ali	eat-pt	apple	
	'Ali ate an apple.			

(16c)	*Ravi*	*ēka*	*sēba*	*khā**yā***	(Hindi)
	Ravi	one	apple	eat-pt	
	'Ravi ate an apple.'				

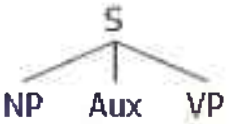
Now, looking at the three sentences from different languages, English, Arabic and Hindi, respectively, it is so very clear how tense is represented on verbs. For instance, in English the verb *played* is in the past tense indicated by ***–ed*** which is a past tense inflectional suffix for the infinitival form of this verb is *play*. In Arabic, the tense is represented on the verb *ʔaka-**a*** (he ate) by means of the inflectional suffix ***–a***. The infinitival form of the Arabic verb*ʔaka-**a*** is *the triliteral* root *ʔ K L* (to eat). In Hindi, the same thing can be said about the verb *khā**yā*** where the past tense is represented by means of the inflectional suffix ***–yā***. This can be seen clearly from the infinitival form, viz. *khā* (to eat), of the verb *khā**yā*** in Hindi.

Now, if this is true, i.e. if tense is the essential grammatical factor/category that distinguishes a sentence from a non-sentence constituents, viz. other constituents like NPs, APs, PPs, nonfinite clauses, etc. and since tense is represented on verbs by means of inflections in almost all languages as has been seen in the three

examples from the three different languages[56], it follows that what really matters is inflection and that S is nothing more than I(nflectional) Phrase (IP). ➔ (1)

Another argument in this respect is that when we tackled the PS rule, namely, (33a) in Chapter 6 reproduced here as (17a), we concluded that Aux (which includes tense) is an essential constituent of the sentence. However, let's examine which should be the head in the rule presented in (17a) represented in the tree diagram (17b).

(17a) S➔ NP Aux VP
(17b)



Looking closely at (17a&b), we can ascertain that S consists of three constituents, viz. NP, Aux and VP. However, examining the nature of the three constituents, it is clear that NP and VP are phrasal categories which have maximal projections ending in lexical categories like a noun and verb, as has been seen above, but is Aux so? In fact, Aux is not a phrasal category due to the fact that even if it projects, it projects into either auxiliary verb which cannot stand alone, on the one hand or it projects into *Neg, Emph and T* which are all not phrasal categories on the other hand, and hence, Aux seems to be a grammatical category.

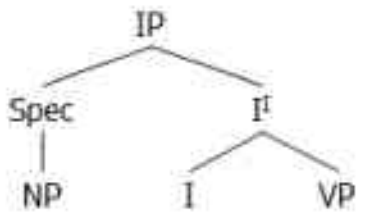
Now, looking at (17b), and as far as X^I Theory is concerned, the order of the three constituents, namely, NP Aux VP seems to give us a very vivid clue that Aux is a head, the NP is a Specifier and VP is a complement. This is so due to the fact that all the three elements are obligatory in the sentence. Now, taking our argument in (1) above into consideration, and since Aux is the head of the sentence, and since Aux is represented by I(nflections), it follows that ***I*** is the head of the sentence and the NP (the subject) is its specifier and the VP is its complement. ➔ (2)

Now, from our arguments in (1) and (2) above, it follows that S = IP and IP will have the X^I rule in (18a) and X^I schema in (18b).

(18a) IP ➔ NP I VP

[56] It is also the same thing in German and French see (exercise 6 below).

(18b)

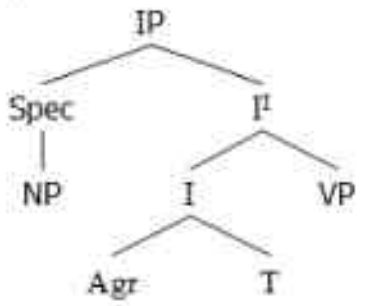


Now, the question to be seriously addressed here is that what should occupy I position? You may say that I should be occupied by inflection because inflection represents T(ense) and, in principle, you are right! In fact, this also leads us to another subsequent question, i.e. does inflection represent T *per se*? Before answering this question, let's consider (19a-d)

(19a) *He laughs.*
(19b) *She laughs.*
(19c) *I laugh.*
(19d) *They laugh.*
(19e) **He laugh.*
(19f) **She laugh.*

We all know that the sentences in (19a-d) are in the present tense but the verb *laugh* carries the inflectional suffix ***–s*** in (19a) and (19b) but it does not carry it in (19c) and (19d), why? We all also know that carrying the inflectional suffix ***–s*** in (19a) and (19b) indicates subject-verb agreement between the subject *He* and *She* and the verb *laugh* and hence, it is not T alone which is represented by I(nflection). You might also think that the inflectional suffix ***–s*** is a tense marker *per se* but if it were so, it would have appeared on the verb *laugh* in (19c) and (19d). This can also be understood from the ungrammaticality of (19e) and (19f). If this is true, it follows that the inflectional suffix ***–s*** represents also the subject-verb agreement and hence, the answer to the question addressed above. This also makes us argue that I will be occupied by T and Agr(eement) and hence, reformulating the X^{I} schema of IP in (19b) will give a schema like (20) below:

(20)



where I, i.e. the head, projects into Agr and T.[57] Now, in (20), a relation between Agr and Spec can be defined as this relation defines the subject-verb agreement. To understand the nature of this relation, it is necessary to find out what is Agr to Spec and vice versa. Thus, to read left to right, a relation between Spec and Agr is defined, i.e. exactly Spec-Head relation and if from right to left, another relation is defined, viz. Head-Spec relation. In the former, the subject-verb agreement is ***licensed*** and in the latter another relation is defined which is not our concern here. Suffice to understand here that what is meant by agreement in Spec-Head relation (configuration) is that both Spec and Agr of I must bear the same features. These features are called Φ--features, i.e. exactly person, number and gender. Thus, this agreement relation can be formally generalized in (21) below.

(21) **Spec-Head Agreement**

In [Spec-Head] configuration, Agreement relation is established such that both the Head and its Specifier must carry the same features.[58]

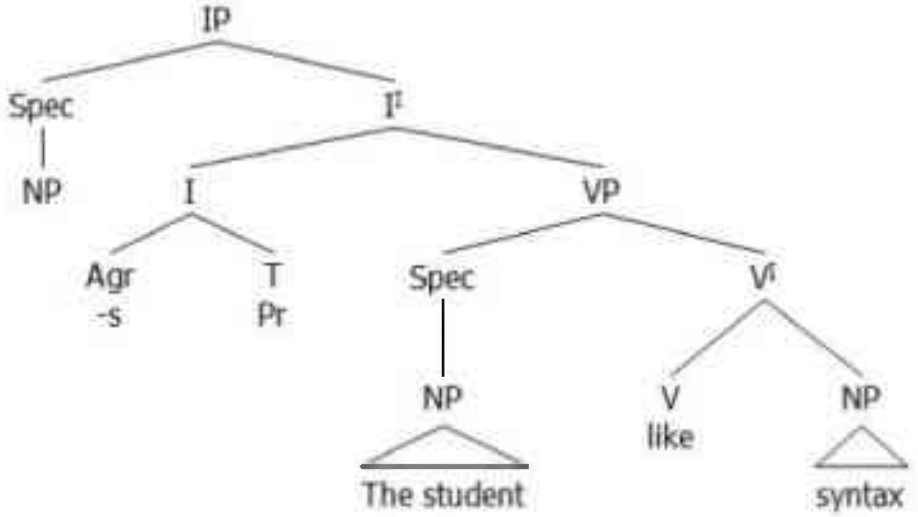
Bearing all the above in mind, we can now proceed further to tackle the issue of how different types of sentences are derived. Let's start out with simple sentences having subject, verb and object. Now, consider (22a) and its derivation in (22b).

(22a) *The student likes syntax.*

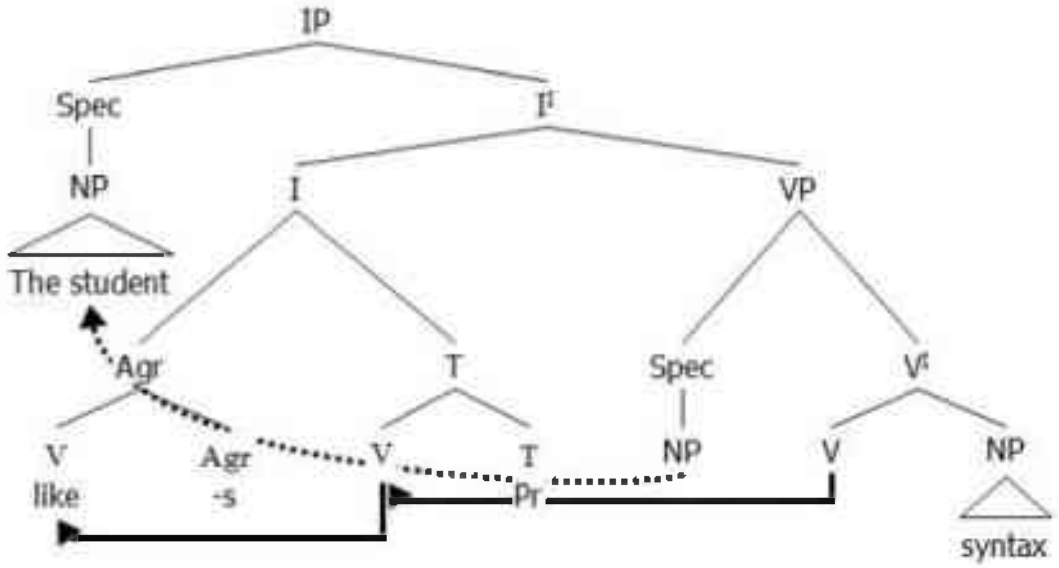
[57] The projection of a Head like I into Agr and T is called in ***Minimalism*** a ***Complex Head*** see, for instance, (Roberts, 2009; Shormani, (in press); Chomsky, 1999).

[58] Note that this agreement is not concerned merely with ***subject-verb agreement*** in IP but also with ***Spec-head agreement*** in DPs like Arabic simple DPs as in *?arajul-u l-jaid-u* (literally: the-man the-good) and complex DPs as in *kitaab-u t-taalib-i* (the student's book). The latter DP is called a. Construct State, a common structure in Semitic languages like Hebrew and Arabic). See (e.g. Shormani, in press; Bardeas, 2008, 2009; Chomsky, 1999, 2000; Travis, 1984; Benmamoun, 2003).

(22b)



(22c)



What we see in (22b) and (22c) is two derivations for the same sentence. This is actually something new to us. In (22b), all the constituents, the subject NP *the student,* the verb *like* and the object NP *syntax* originate inside VP in their "bare

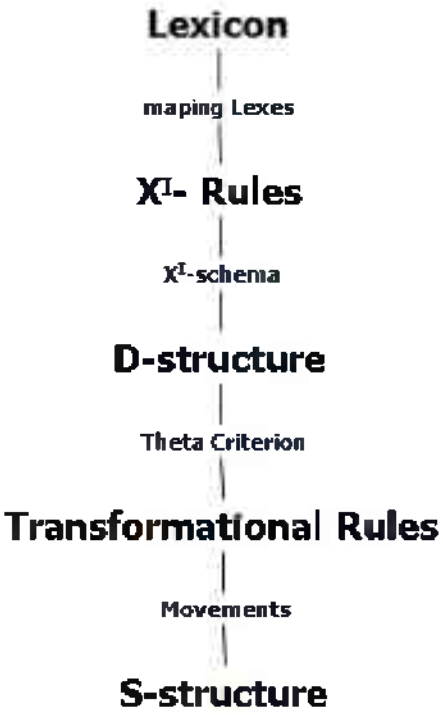
form."[59] In (22c), two constituents have been moved up. In that, the subject NP raises from being in Spec-VP to Spec-IP. The verb *like* originates under V and then moves to T constituting the configuration [T[V,T]]. It does not stop there but continues and moves to Agr constituting the configuration [Agr [V Agr]].[60]

Thus, looking at (22b), we come to a conclusion that X^{I} Rules are not enough to generate sentences in their final state. This is so because the subject NP *the student* has to occupy the Spec-IP. To understand what is going on in both (22b&c) actually requires us to define another essential phenomenon in the model of grammar we are developing here. Thus, according to Chomsky, X^{I} Theory provides us with rules but these rules are not enough to generate all sentences in a language and so he proposes ***Transformational Rules.*** These ***Transformational Rules*** take place on syntax after the X^{I} rules map lexical categories (words) from lexicon onto syntax in their ***bare form***. To understand the nature of such a process, consider the model of grammar in (23) below which provides us with a complete and comprehensive picture of the process taking place and the interaction between lexicon and X^{I} rules.

[59] i.e. without inflections. In fact, according to ***P&P***, lexes come up from the lexicon and mapped onto syntax uninflected. They, however, get inflected on syntax by means of ***transformational*** movements specifically when they transfer from DS to SS levels of representation and before Spell-Out Operation (see the computational system of a constituent processing below).

60 The subject's movement to ***Spec-IP*** is called ***Subject-Raising*** which is a ***Transformational Role*** necessitated by ***EPP***. Moreover, the verb's movement to I is called ***V-Raising to I*** necessitated by subject-verb agreement. EPP (Extended Prosecution Principle) is a projection which necessitates that every clause must have a subject (Ouhalla, 1999).

(23) The Computational System



According to the model of grammar shown in (23), what happens when we want to produce a sentence is that first lexicon maps lexes (words) onto the syntax. These words are structured according to X^{I} rules and assigned X^{I} schema. Up to this point, the resulting tree is called Deep Structure (DS). In this point of derivation, Theta Roles are assigned by the verb to its arguments.[61] This is very clear in (22b) where the verb *like*'s arguments, namely the external argument, *The student* and the internal argument *syntax* are assigned Thematic Roles of Affected and Affecting, respectively. As it is in this point of derivation, X^{I} rules are not enough as stated earlier and thus something else has to take place. In other words, the subject *The student* has to move to the Spec-IP. This movement is conditioned by EPP.[62] This movement is called ***Spec-to-Spec Movement***. However, this is also not enough because the verb *like* has to be marked for T and Agr. This requires another movement to take place. This movement is called ***Head-to-Head movement*** which results in the verb *like* moving from V to T to get tense feature and finally moves to

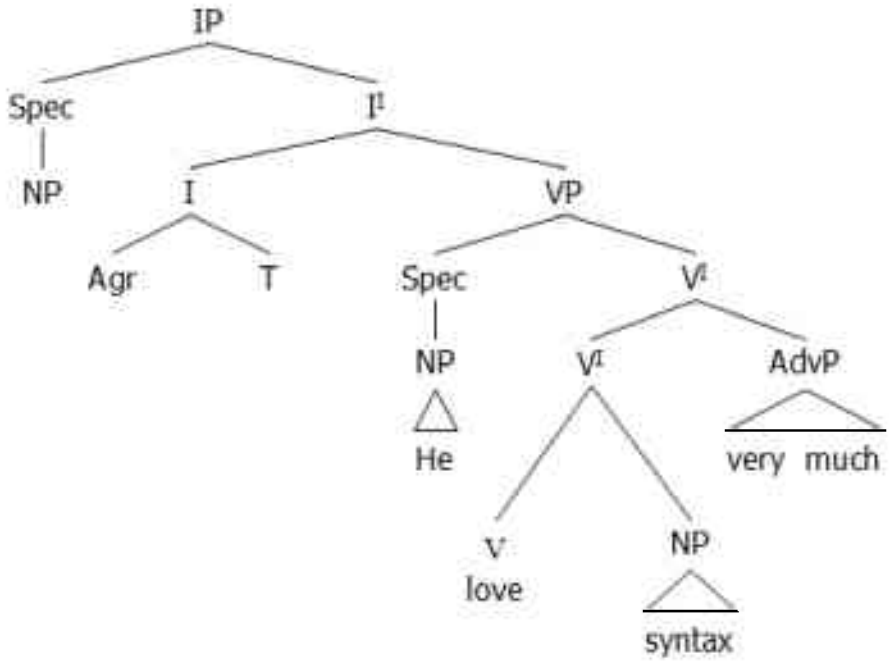
[61] See Chapter 7 where such Thematic Roles as ***Agent, Actor, Affected,*** etc. have been discussed in relation to subcategorization properties and selectional restrictions see (Rosen, 1984; Saeed, 2003; Schachter, 1984; Abraham, 1978; Allerton, 1982).

[62] Do not worry about such terms introduced due to theoretical requirements see (Footnote 60 for EPP).

Agr where it gets Agr feature and hence, be in agreement relation with the subject *the student*.[63] Thus, from now on, we will call tree diagrams like (22b) DS and those like (22c) SS.

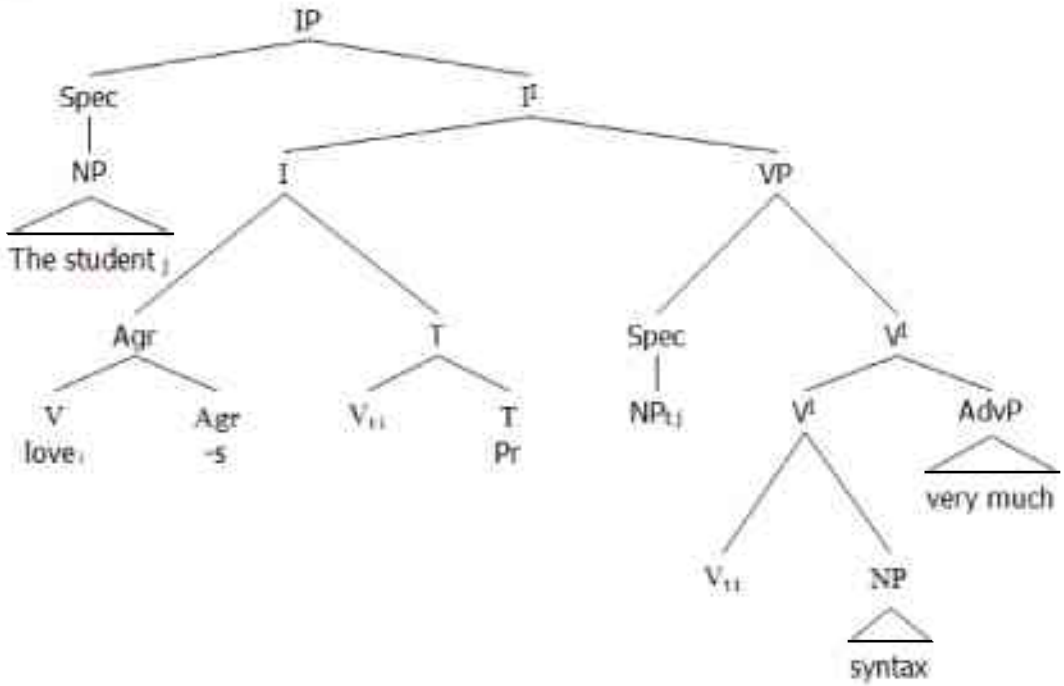
In (22a,b&c), we consider a simple sentence. A simple sentence in the sense that the verb has only one complement and that there are no adjuncts. Now, we can proceed to derive different types of sentences in English having different kinds of adjuncts. Consider (24a) and its derivation in (24b&c) representing DS and SS, respectively.

(24a) *He loves syntax very much.*
(24b)
SS



[63] (See Footnote 60 for ***V-Raising to I***)

(24c)
SS



(24b) is the DS derivation tree of the sentence *He loves syntax very much* presented in (24a). You should note where the lexical categories originate. There are, however, two categories that move, namely, the subject NP *He* and the verb *love*, why?

Note also that the AdvP *very much* modifies the verb *love* and hence, it is adjoined to V^{I}, why? However, the object NP *syntax* does not move but rather remains ***in-situ***, why?[64] The same thing can be said about the AdvP *very much* which also remains in-situ. However, the former differs from the latter in that it is adjoined to V, i.e. the head, while the AdvP is adjoined to V^{I}, why?

Note also that there is something different that distinguishes (22c) from (23c). In the former, we have used arrows to signal the movements taking place there. However, in the latter, i.e. (24c), there are traces represented by ***t***. There are also indices represented by **i** and **j**. **i** points to the verb movement and **j** represents the subject NP movement. The use of traces in (24c) requires us to introduce an operation called ***Trace Convention*** into the model of grammar we are developing here. Thus, this is generally formalized in (25).

[64] The term "in-situ" refers to the syntactic position where a constituent originates.

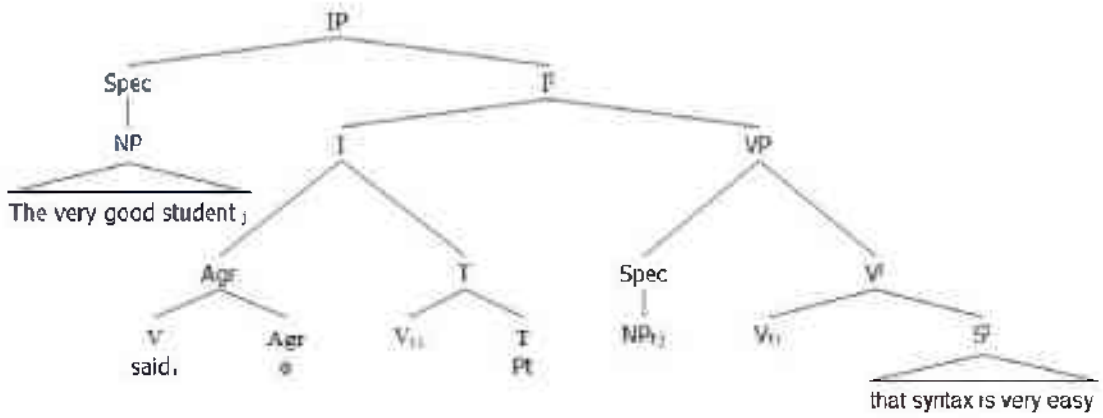
(25) Trace Convention

An XP undergone a transformational movement leaves a trace behind.

With the trace convention in mind, consider (26a) which represents a sentence the verb of which has an S^{I} as a complement. This sentence will have the SS derivation tree in (26b).

(26a) *The very good student said that syntax is very easy.*

(26b)
SS



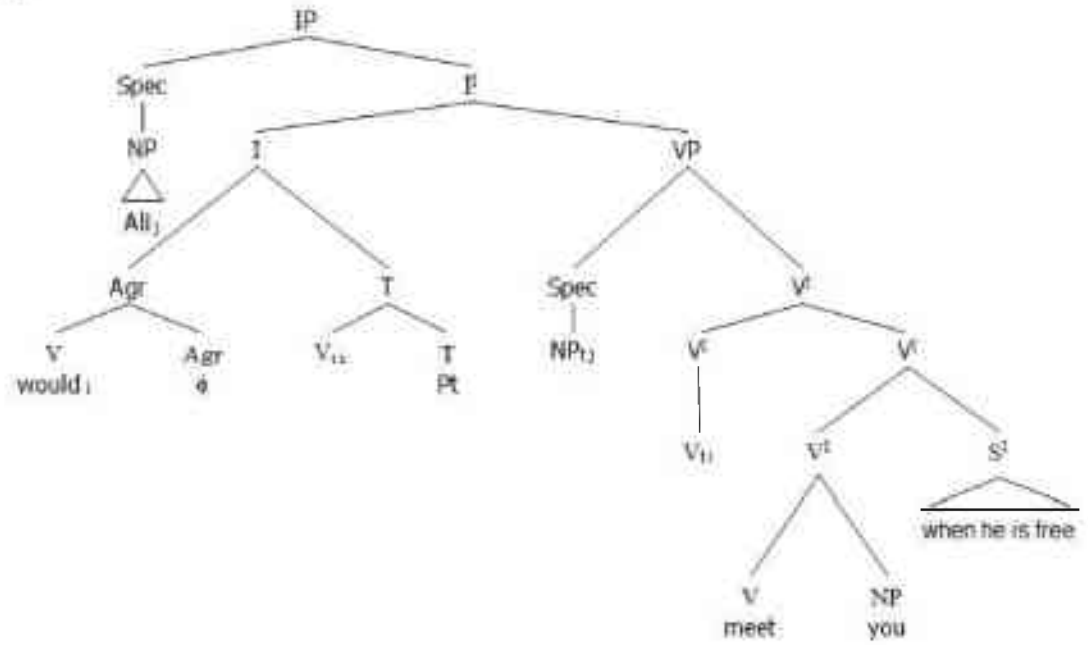
Two important points you have to consider in (26b). The first is that only SS is provided. In fact, there is nothing theoretical behind that. I only intend to avoid much detail (you can also do the same but very carefully!!). The second is that the complement S^{I} is a sister to the head V and that Agr in past tense does not exist in English and hence, represented with ϕ and the verb *said* surfaces in its past form rather than present form.

As noted above, the S^{I} in (26) has been used as a complement and hence, adjoined to the head V. Now, consider (27a&b) where the S^{I} is an adjunct.

(27a) *Ali would meet you when he is free.*

(27b)

SS



Three points have to be noted in (27b), too. The first is that the modal ***would*** has been introduced into the derivation. This modal was adjoined to V^{I}. In fact, modals are considered adjuncts to the main verb. It is only the modal which moves first to T to get T and then to Agr though Agr here is ϕ. The second is that the S^{I} is adjoined to V^{I} because it is an adjunct. The third point is that the main verb *meet* does not move. It rather remains in its in-situ position simply because there is nothing compelling it to do so.

Thus, as far as English is concerned, X^{I} Theory seems to account for facts concerning constituent structure in a very much advanced way. As far as non-verbal constituents are concerned, NPs, for instance, have been investigated in much more detail. As for verbal constituents, there are many things that have not been tackled, however. Such things like nonfinite clauses, preverbal adverbs, sentence initial adverbs, double object constructions as in the case of verbs like *give* among other things are not tackled as well. However, some of these will be tackled in exercises and some others can be induced from our explanations above.

Thus, this much will be our final stage on X^{I} Theory concerning constituent structure in English.

8.2.9. Application of X^{I} Theory to Other languages

It is a fact that for syntacticians to be called a theory, a model, a hypothesis and/or a framework has to be applied to more than one language. The theory we have been developing in this Chapter is X^{I} Theory. Now, is applying this theory to English enough to be considered a theory? In fact, ***not***. It has to be applied to some other languages. Let's now examine applying X^{I} Theory to data from Arabic and Hindi for I believe that these two languages in addition to English would suffice to consider it a theory on the grounds that these three languages belong to different language families with different word orders. Now, consider the Arabic sentence in (28a) for SVO and (28b) for VSO word orders in Arabic sentence structure, respectively. Their derivations will be presented in (28c&d), respectively.

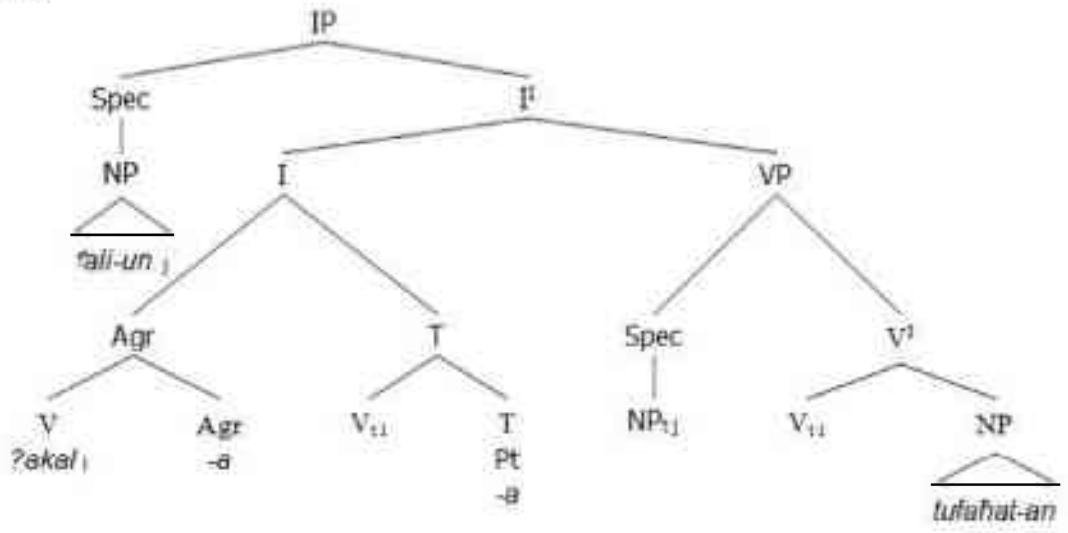
(28a)	*ʕali-un*	*ʔakal-a*	*tufaaħat-an*	(Arabic, SVO)
	Ali	eat-pt	apple	

'Ali ate an apple.

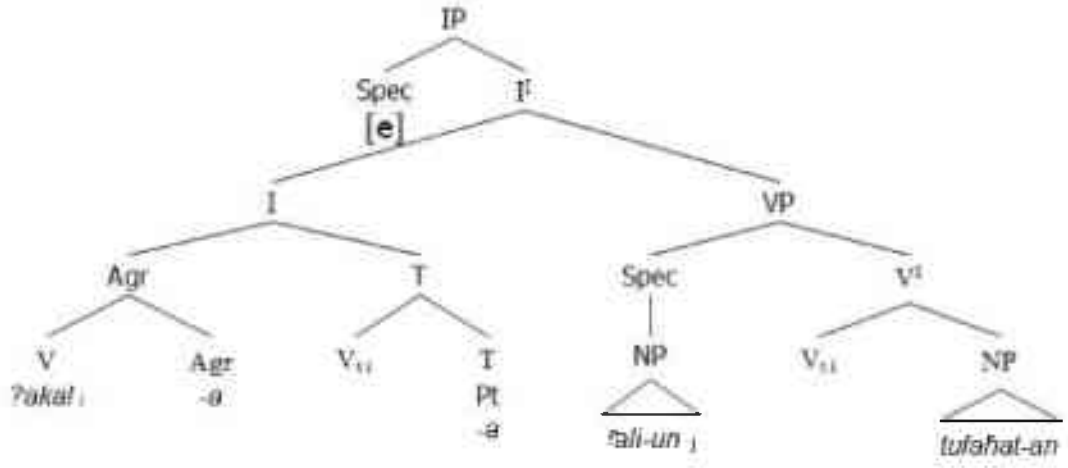
(28b)	*ʔakal-a*	*ʕali-un*	*tufaaħat-an*	(Arabic, VSO)
	Ali	eat-pt	apple	

'Ali ate an apple.

(28c)



(28d)



In (28c), the Arabic sentence *ʕali-un ʔakal-a tufaaħat-an* (Ali ate an apple) seems to have a derivation tree like English. The subject NP *ʕali-un* (Ali) moves to Spec-IP and the verb *ʔakal* (ate) moves first to T and then to Agr. The inflectional suffix ***–a*** is put under both T and Agr due to the fact that in Arabic ***–a*** is a marker for both agreement and past tense. I think this is enough because going in much detail

is beyond the scope of this Chapter. However, suffice for this moment is to claim that during Spell-Out process, both ***–a's*** will be adjoined into one.[65]

Now, comparing (28c) to (28d), you will find that in the former, the subject NP *ʕali-un* does not raise to Spec-IP but rather remains in-situ. This is so due to the fact that the sentence *ʔakal-a ʕali-un tufaaħat-an* (literally: ate Ali an apple) is a VSO sentence (what is called in Arabic verbal sentences) where the subject does not raise for word order constraint imposed by such an Arabic word order. In fact, in such a word order, it is believed that Agr is very weak. However, the suffix *–a* still appears under Agr. In fact, the weak Agr must be understood in terms of number only, on the one hand. On the other hand, this suffix ***–a*** does not carry only number feature but also person and gender features and hence, it still appears under Agr. In fact, the ***–a*** suffix carries a "bundle" of features, i.e. all ϕ-features together (Fassi Fehri, 1993, 2012).

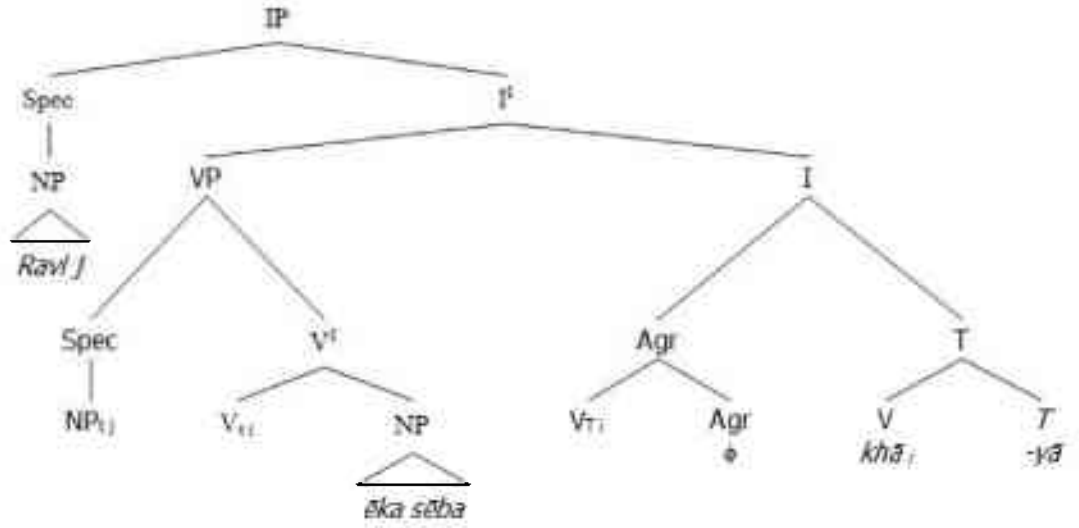
Now, let's consider (29a) which represents a sentence from Hindi. However, before trying to derive this Hindi sentence, you have to bear in mind that Hindi is an SOV language. Thus, the sentence in (29a) will have the derivation in (29b).

(29a)	*Ravi*	*ēka*	*sēba*	*khāyā*	(Hindi)
	Ravi	one	apple	eat-pt	

'Ravi ate an apple.'

[65] ***Spell-Out*** is a phonological process signifying the end of the constituent processing. It is the state where the final form of a constituent, be it an NP, PP, IP, etc. will be produced by the speaker and perceived by the hearer.

(29b)



In (29b), there seems to be a different structure. Now, compare (29c) to (28c&d), what you are going to find is that in the former, I and VP have been placed the other way around. Unlike the latter, in the former, the I has been placed to the right of VP. However, the order of T and Agr seems to be just like those found in English and Arabic. What is going on here is that because Hindi is an SOV language, X^{I} schema has been subjected to such a Hindi word order, on the one hand. On the other hand, there is nothing in the theory that states something regarding the order of constituent representation in tree diagrams, i.e. there is nothing in X^{I} Theory compelling us to place I either to the left or to right *per se*. Note that this derivation is not a matter of movements but rather an original one. In other words, (29b) is not a result of transformational rules regarding I and VP. It rather represents the normal word order Hindi is of. As far as the transformational movements are concerned, there are two movements, namely, the subject NP *Ravi* which moves from Spec-VP to Spec-IP, i.e. like those found in English and Arabic for satisfying the EPP (in general). The V *khā* (to eat) moves first to adjoin to Agr and then to T. Now, whether the suffix ***-yā*** represents T and/or Agr, let's consider (30a-e).

(30a) *Hama* *ēka* *sēba* *khāyā*
We one apple ate

'We ate an apple.'

(30b) *Vaha* *ēka* *sēba* *khāyā*
She one apple ate

'She ate an apple.'

(30c) *Vē* *ēka* *sēba* *khāyā*
They one apple ate

'They ate an apple.'

(30d) *Maiṁ* *ēka* *sēba* *khāyā*
I one apple ate

'I ate an apple.'

(30e) *Āpa* *ēka* *sēba* *khāyā*
You one apple ate

'You ate an apple.'

As these examples illustrate, the verb *khāyā* (ate) has the same form for all persons, numbers and genders in Hindi represented by the pronouns *Hama, Vaha, Vē, Maiṁ* and *Āpa* (we, she, they, I and you), respectively. This seems to be similar to English and different from Arabic. Consequently, the suffix *–yā* has to be placed under T *per se*. Thus, it seems that in Hindi, Agr is "weak" for all ϕ-features as illustrated in (30a-e). *Weak* in the sense that it is unable to "see" ϕ-features and have Agr for them.

Thus, applying X^{I} Theory to English, Hindi and Arabic as well as the flexibility it shows regarding the way trees are represented with much flexibility regarding word orders of different languages makes us able to postulate and call it a ***Theory***.

Summary

There are several problems and drawbacks PSRs Theory has come up with. One of these drawbacks is that it generates an infinite number of grammatical and ungrammatical sentences in a language. Another one is that it does not differentiate between a complement and a modifier. The former was solved by introducing lexicon insertion where lexes are inserted or mapped onto syntax depending on the specifications encoded on them. The latter, however, was actually the starting point for a new approach for constituent representation which structurally represents

modifiers differently from complements. This approach is called ***X-bar Theory***. In this theory there are three levels of representation and hence, three projections every constituent, be it a phrase or a sentence has to have. The first is called ***Maximal Projection***, the second ***Intermediate Projection*** and the third ***Minimal Projection***. The maximal projection is called XP, the intermediate projection is called X^{I} and the minimal projection is called X^{0} or head. In the tree diagram, specifiers, modifiers and adjuncts are sisters to X^{I} and complements are sisters to X^{I}. Another advantage of this theory is that a node must have only and only two branches. According to this theory, S is IP where I stands for inflection and P for phrase. In addition, two transformational rules have been introduced. The first is called ***V-Raising to I*** (T and then Agr) and the second is ***Subject-Raising to Spec-IP***. The former is necessitated by T and Agr and the latter by ***EPP***. Subject-verb agreement is licensed in ***Spec-Head*** relation between I and Spec-IP. This theory has been applied to languages other than English with different word orders like Arabic and Hindi and hence, accounting for language variation adequately, accurately and efficiently.

Suggested Readings

A very comprehensive account on X^{I} Theory can be found in (Radford, 2004; Jackendoff, 1977). Ouhalla (1999) has also devoted much to discussing X^{I} Theory and its being a radical change from PSRs. You can also find valuable information about X^{I} Theory in Carnie (2006).

For a thorough discussion on verb raising and subject raising, see (Contreras, 2003; Radford, 2004, 2009; Ouhalla, 1999).

For subject-verb agreement, see (Mohammad, 1990, 1999; Ouhalla, 1999; Radford, 2004, 2009; Postal, 1974). For how adjunction in X^{I} Theory is accounted for in Universal Grammar, see (Kidwai, 2000; Kornai & Pullum, 1990).

For accounting for Trace Theory in the syntactic theory, see (Lightfoot, 1976).

Exercises

1. Derive the following phrases and sentences in X^{I} Theory and account for language variation. (Note: *DO NOT* use triangles).

i. The big book…

ii. Your very answer to the question…

iii. *la* *maison* *sur* *la* *colline* (French)
the house on the hill

iv. *ʕali-un* *katab-a* *kita:b-an* (Arabic)

v. Alia's big new car…

vi. *la* *maison* *splendide…* (French)
the house splendid

vii. Musa has become very fond of syntax.

viii. *yu:suf-u* *?akal-a* *jamal-an* (Arabic)

ix. To love syntax is to love Yemen.

x. Ali really thinks that Roblah hates Tareq.

xi. Mae` *eka* *seba* *khaya* (Hindi)
I one apple ate

xii. To-forgive-me letters …

xiii. Right down the hill…

xiv. A very good response to the question….

xv. Really very fond of syntax…

xvi. The fact that the moon revolves around the sun…..

xvii. You students are …..

xviii. The big new red house in the forest…

xix. The idea that Ali should leave…

xx. The boy respects the girl very much.

xxi. I like to speak English.

xxii. Who knows syntax well will pass today's exam.

xxii. You level three students studying this year are the true builders of our beloved Yemen.

xxiii. Who wants me to go home gives who visits me what they want to have.

2. X^{I} Theory has been advocated to be a radical change from PSRs. ***Prove this statement true focusing on the issue of modifiers and complements.***

3. X^{I} Theory in a way or another proves that syntax is a scientific discipline by what it has brought to the study of language. ***Are you pros or cons? Either, prove your view point supporting your answer with examples form English and Arabic.***

4. In this Chapter, it has been claimed that S is IP. How?

5. In Arabic VSO word order sentences, there is no ***V-Raising to I*** movement and hence, subject-verb agreement is deemed to be ***weak***. ***State this weakness, and is it really a weakness?***

6. In this chapter, we have concluded that (T)ense and Agr(eement) markers are expressed by means of (I)nflections) appearing on the verb and hence, S=IP. ***Prove this conclusion true in German and French in the following examples.***

i) *Elle*	*a vu*	*le*	*chien*	*dans*	*le*	*jardin*	(French)
She	saw	the	dog	in	the	garden	

'She saw the dog in the garden.'

ii) *Elle*	*vois*	*le*	*chien*	*dans*	*le*	*jardin*	(French)
She	sees	the	dog	in	the	garden	

'She sees the dog in the garden.'

Note: the infinitive form of the French verb ***a vu/vois*** (saw/sees) is ***voir***.

iii) *Sie*	*sah*	*den*	*Hund*	*in*	*den*	*Garten*	(German)
She	saw	the	dog	in	the	garden	

'She saw the dog in the garden.'

iv) Sie	sieht	den	Hund	in	den	Garten	(German)
She	saw	the	dog	in	the	garden	

'She sees the dog in the garden.'

Note: the infinitive form of the German verb ***sah/sieht*** (saw/sees) is ***sehen***.

Bibliography

Aarts, B. (1997). *English Syntax and Argumentation.* New York: St. Martin's Press.

Abney, S. (1987). *The English Noun Phrase in its Sentential Aspect*. Unpublished Ph.D. dissertation, MIT.

Abraham, W. (ed). (1978). *Valence, Semantic Case, and Grammatical Relations.* Amsterdam and Philadelphia: John Benjamins

Adger, D. (2003). *Core Syntax: a Minimalist Approach*. Oxford: Blackwell.

Alexiadou, A., Hankamer, J., McFadden, T., Nuger, J. & Schafer, F. (2009) *Comparative Germanic Syntax*. John Benjamins B.V.

Allerton, D. J. (1982). *Valency and the English Verb.* London: Academic Press.

Andrews, A. (1985). The Major Functions of the Noun Phrase. In Shopen, T. (ed)., *Language Typology And Syntactic Description*, I, 62–154. Cambridge University Press.

Assiri, A. (2011). *Arabic Adjectival Phrases: An Agree-based Approach*. Memorial University of Newfoundland.

Baker, C. & McCarthy, J. (eds.) (1981). *The Logical Problem of Language Acquisition*. Cambridge: MIT Press.

Baker, M. (2001) *The Atoms of Language: The Mind's Hidden Rules of Grammar*. New York: Basic Books.

Baker, M., Johnson, J. & Roberts, I. (1989). Passive Arguments Raised. *Linguistic Inquiry* 20, 219–51.

Baltin, M. & Collins, C. (2000). *The Handbook of Contemporary Syntactic Theory*. Oxford: Blackwell.

Baltin, M. & Kroch, A. (1989). *Alternative Conceptions of Phrase Structure.* Chicago: University of Chicago Press.

Bardeas, S. (2008). A Minimalist Approach to the Semitic Construct State. *York Papers in Linguistics Series 2*, 9, 1-22.

Bardeas, S. (2009). The Syntax of the Arabic DPs. Unpublished Ph.D Dissertation, University of York.

Beck, S. & Johnson, K. (2004). Double Objects again. *Linguistic Inquiry* 35, 97–124.

Benmamoun, E. (1992). Inflectional and Functional Morphology: Problems of Projection, Representation and Derivation. PhD thesis, USC, Los Angeles.

Benmamoun, E. (1998). Spec-head Agreement and Overt Case in Arabic. In: Adjer, D., Pintzuk, S., Plunkett, B., & Tsoulas G. (eds.), Specifiers: Minimalist Approaches. Oxford University Press, New York/Oxford, 110–125.

Benmamoun, E. (2000). The Feature Structure of Functional Categories: A Comparative Study of Arabic Dialects. Oxford University Press, Oxford.

Benmamoun, E. (2003). Agreement Parallelism between Sentences and Noun Phrases: A Historical Sketch. *Lingua 113*, 8, 747-764.

Berman, A. (1978) (ed.), *Modern Hebrew structure, Tel-Aviv*: Universities Publishing Projects.

Bhat, R. (2012) Many or More: the Hindi-Urdu Degree Word Zyaadaa and the Analysis of Bare Comparatives. Available on (*www.fosssil.in/manymore.pdf*).

Bloch, B. & Trager, G. (1942). *Outline of linguistic analysis*. Special publications of the Linguistic Society of America. Baltimore: Linguistic Society of America.

Bloomfield, L. (1933). *Language*. New York: Henry Holt and Co.

Bobaljik, J. & Brown, S. (1997). Interarboral Operations: Head movement and the Extension Condition. Linguistic Inquiry 28:345–356.

Boeckx, C. & Stjepanovic, S. (2001). Head-ing toward PF. *Linguistic Inquiry* 32, 345–355.

Borer, H. (1988). On the Morphological Parallelism between Compounds and Constructs. Yearbook of Morphology, 1, 45–65.

Borer, H. (1996). The Construct in Review. In: Lecarme, J., Lowenstamm, J., Shlonsky, U. (eds.), Studies In Afroasiatic Grammar. Holland Academic Graphics, The Hague, 30–61.

Borer, H. (1999). Deconstructing the Construct. In Johnson, K. & Roberts, I. (eds.), *Beyond Principles and Parameters: Essays in Memory of Osvaldo Jaeggli*, 43–89. Dordrecht: Kluwer Academic Publishers.

Borsley, R. (1996). *Modern Phrase Structure Grammar*. Oxford: Blackwell.

Bresnan, J. (1972). Theory of Complementation in English. Ph.D. dissertation, MIT.

Bresnan, J. (1982). *The Mental Representation of Grammatical Relations.* Cambridge: MIT Press.

Bresnan, J. (2001). *Lexical-Functional Syntax*. Oxford: Blackwell.

Bibliography

Bruner, J. (1983). *Child's Talk: Learning to Use Language*. New York: Norton.

Carnie, A. (2006). *Syntax: A Generative Introduction.* (2nd Ed.) Blackwell Publishing Ltd.

Chomsky, *N*. (1957). *Syntactic Structures*. Mouton: La Haye.

Chomsky, N. (1959). A Review of B. F. Skinner's Verbal Behavior. *Language,* 35, 26-58.

Chomsky, N. (1965). *Aspects of the Theory of Syntax*. Cambridge: MIT Press.

Chomsky, N. (1968). *Language and Mind*. New York: Harcourt Brace Jovanovich.

Chomsky, N. (1970) Remarks on Nominalization. In Jacobs, R. & Rosenbaum, P. (eds.) *Readings in English Transformational Grammar*. Waltham: Ginn, 184–221.

Chomsky, N. (1973) Conditions on Transformations. In Stephen, A. & Kiparsky, P. (eds.), *A Festschrift for Morris Halle*. New York: Holt, Rinehart and Winston, 232–86.

Chomsky, N. (1975). *The Logical Structure of Linguistic Theory*. New York: Plenum.

Chomsky, N. (1981). *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, N. (1993). A minimalist Program for Linguistic Theory. In Hale, K. & Keyser, S. (eds.), *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, 1–52. Cambridge, Mass.: MIT Press.

Chomsky, N. (1995). *The Minimalist Program*. Cambridge: MIT Press.

Chomsky, N. (1999). Derivation by phase. *In MIT Occasional Papers in Linguistics*. Cambridge: The MIT Press.

Chomsky, N. (2000). Minimalist Inquiries: The framework. *In Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, (ed). Martin, R., Michaels, D. & Uriagereka, J. 89–155. Cambridge, MA: MIT Press.

Chomsky, N. (2002). *On Nature and Language*. Cambridge: Cambridge University Press.

Chomsky, N. (2005). Three Factors in Language Design. *Linguistic Inquiry.* 36, 1–22.

Chomsky, N. (2008). On phases. In *Foundational Issues in Linguistic Theory*, (ed). Carlos, O. & Maria-Luisa, Z. Cambridge, MA: MIT Press, 133–166.

Cinque, G. (1981). *Types of A' Dependencies*. Cambridge: MIT Press.

Cinque, G. (1996) The antisymmetric programme: Theoretical and Typological Implications, *Journal of Linguistics*, 32, 447-464.

Cinque, G. (1999). Adverbs and Functional Heads: A Cross-Linguistic Perspective. Oxford: Oxford University Press.

Cinque, G. (2003). Greenberg's Universal 20 and the Semitic DP. In *Grammatik i fokus/ Grammar in Focus. Festschrift for Christer Platzack, 2*, Lars-Ol of Delsing.

Cinque, G. (2005). Deriving Greenberg's Universal 20 and Its Exceptions. *Linguistic Inquiry,36* (3), 315-332

Citko, B. (2008a). Missing labels. *Lingua,* 118, 907-944.

Citko, B. (2008b). Missing labels: Head Movement as Project Both. In Proceedings of the 26th West Coast Conference on Formal Linguistics, (ed). Charles, B. & Haynie, H., 121–128.

Clark, E. (1993). *The Lexicon in Acquisition*. Cambridge University Press

Clark, E. (2003). *First Language Acquisition*. Cambridge University Press

Collins, C. & Thráinsson, H. (1996). VP Internal Structure and Object Shift in Icelandic. *Linguistic Inquiry, 27*, 391–444.

Comrie, B. (1985). *Tense*. Cambridge: Cambridge University Press

Contreras, H. (2003). Verb Raising as Syncretic Category Movement. In Carmichael, L., Huang, C-H., & Samiian, V. (eds.), *Proceedings of the 13th Western Conference on Linguistics*, 86–103.

Cook, V. J. and Newson, M. (2007). *Chomsky's Universal Grammar: An Introduction*. (3rd Ed.) Oxford: Blackwell.

Cowper, E. (1992). *A Concise Introduction to Syntactic Theory*. University of Chicago Press.

Croft, W. (1991). *Syntactic Categories and Grammatical Relations.* Chicago and London: University of Chicago Press.

Culicover, P. (1997). *Principles and Parameters: An Introduction to Syntactic Theory*. Oxford: Oxford University Press.

Danon, G. (2011). Agreement and DP-Internal Feature Distribution. *Syntax*. 14*(4)*, 297–317.

Dikken, M. (1995). *Particles: On the Syntax of Verb-Particle, Triadic, and Causative Constructions*. Oxford: Oxford University Press.

Dimitrova-Vulchanova, M. (2003). Modification in the Balkan nominal expression: An account of the (A) NA: AN (*A) order constraint. In From NP to DP, Volume 1: *The Syntax and Semantics of Noun Phrases*, (ed). Coene, M. & D'Hulst, Y. 91–118.

Dobrovie-Sorin, C. (2002). Adverbs of Quantification and Generidty: From DPs to NPs. Ms, University of Paris 7.

Dobrovie-Sorin, C. (2002). From DPs to NPs: A Bare Phrase Structure Account of genitives. Ms, University of Paris 7.

Dobrovie-Sorin, C. (2002). From DPs to NPs: A Bare Phrase Structure Account of Genitives, M. & D'Hulst, Y. (eds.) From NP to DP, 2: *The expression of possession in noun phrases*. Amsterdam/Φladelφa: John Benjamins (Linguistik Aktuell/Linguistics Today).

Elghamry, K. (2004). Definiteness and Number Ambiguity in the Superlative Construction in Arabic. *Lingua.* 114, 897–910.

Emonds, J. (1980). Word Order in Generative Grammar. *Journal of Linguistic Research* 1, 33– 54.

Fabb, N. (1994). *Sentence Structure*. London: Routledge.

Fassi Fehri, A. (1988). Agreement, Binding, and Coherence. In *Agreement in Natural Language,* Michael Barlow & Charles Ferguson (eds), 107-158. Stanford CA: CSLI.

Fassi Fehri, A. (1989). Generalized IP Structure, Case, Inflection and VS Word Order. MIT Working Papers in Linguistics 10, 75–113.

Fassi Fehri, A. (1999). Arabic Modifying Adjectives and DP Structures. *Studia Linguitica*, 53.2.

Fassi-Fehri, A. (1993). *Issues in the Structure of Arabic Clauses and Words*. Dordecht: Kluwer Academic Publishers.

Fassi-Fehri, A. (2004). *Nominal Classes, Reference, and Functional Parameters, with Particular Reference to Arabic.* Linguistic Variation Yearbook, 4.41–108.

Fassi-Fehri, A. (2012). *Key Features and Parameters in Arabic Grammar*. John Benjamins B. V.

Friedin, R. (ed.) (1991). *Principles and Parameters in Comparative Grammar*. Cambridge: MIT Press.

Gardner, R., B. Gardner & Cantfort, T. (eds.) (1989) *Teaching Sign Language to Chimpanzees* State University of New York Press.

Garrett, M. (1967) Syntactic Structures and Judgments of Auditory Events. Ph.D. dissertation, University of Illinois.

Gass, S. & Selinker, L. (2001). *Second Language Acquisition: An Introductory Course* (2nd Ed.) Lawrence Erlbaum.

Gazdar, G. & Pullum, G. (1981). Subcategorization, Constituent Order and the Notion of 'head'. In Hoekstra, T. Hulst J. & Moortgat, M.(eds)., *The Scope of Lexical Rules*, 107–23. Dordrecht: Foris

Gazdar, G. 1982. Phrase Structure Grammar. In Jacobson, P. & Pullum, J. (eds)., *The Nature of Syntactic Representation*, 131–86. Dordrecht: Reidel.

Gazdar, G., Klein, E. Pullum, M. & Sagm I. (1985) *Generalized Phrase Structure Grammar*. Cambridge: Harvard University Press.

Gazdar, G., Klein, E., Pullum, G. & Sag, I. (1985). *Generalized Phrase Structure Grammar*. Cambridge, MA: Harvard University Press.

Goodall, G. (1993). On Case and the Passive Morpheme. *Natural Language and Linguistic Theory* 11, 31–44.

Grimshaw, J. (1997). Projection, Heads and Optimality. *Linguistic Inquiry,* 28: 373– 422.

Gruber, J. (1965). Studies in Lexical Relations. Ph.D. dissertation, MIT.

Haegeman, L. (1994). *Introduction to Government and Binding Theory* (2nd Ed.). Blackwell.

Hankamer, J. and Mikkelsen, L. (2005). When Movement must be Blocked: A reply to Embick and Noyer. *Linguistic Inquiry*, 36:85–125.

Harley, H. (2002). Possession and the Double Object Construction. *Linguistic Variation Yearbook* 2, 29–68.

Harley, H. (2004). Merge, Conflation and Head Movement: the First Sister Principle revisited. In Moulton, K. & Wolf, M. (eds.), *Proceedings of NELS, 34*. UMass, Amherst: GLSA.

Harley, H. (2006). *English Words: A Linguistic Introduction*. Oxford. Blackwell.

Harrell, R. (1962). *A Short Reference Grammar of Moroccan Arabic*. Washington, DC: Georgetown University Press

Harris, Z. (1946). From Morpheme to Utterance. *Language* 22: 161–83.

Hartmann, J. & Molnarfi, L. (2005). *Comparative Studies in Germanic Syntax: From Afrikaans to Zurich German*. John Benjamins Publishing Company.

Hārūn, A. (1966), *Amr ibn 'Uthmān Sībawayh: Al-Kitab.* Dubai: Dar Al-Qalam.

Hawkins, J. (1983). *Word Order Universals.* New York: Academic Press.

Hockett, C. 1958. *A Course in Modern Linguistics*. New York: Macmillan.

Holes, C. (2004). *Modern Arabic: Structure.s, Functions, and Varieties.* Washington DC: Georgetown University Press.

Holes, C. (2004). *Modern Arabic: Structures, Functions, and Varieties.* Washington DC: Georgetown University Press.

Hopper, P. & Thompson, S. (1984). The Discourse Basis for Lexical Categories in Universal Grammar. *Language,* 60, 703–52.

Horrocks, G. (1987). *Generative grammar.* London: Longmans

Hudson, R. (1984). *Word Grammar.* Oxford: Basil Blackwell.

Hudson, R. (1990). *English Word Grammar.* Oxford: Basil Blackwell.

Hudson, R. (1993). So-called 'Double Objects' and Grammatical Relations. *Language* 68: 251–76.

Hyams, N. (1986). *Language Acquisition and the Theory of Parameters.* Dordrecht: D. Reidel.

Ibb Aqeel, B. (1995). *Sharh 'ibni 'aqeel.* Dar Al-Tala'a

Ibn Hisham (1988). *Al-Nahw Alwafi.* Beirut: Dar al Fikr

Jackendoff, R. (1977). *X-bar Syntax: A Theory of Phrase Structure*. Cambridge: MIT Press.

Jackendoff, R. (1990). *Semantic structures.* Cambridge, MA: MIT Press.

Jaszczolt, K. (2002). *Semantics and Pragmatics: Meaning in Language and Discourse*. London: Longman.

Joshi, A. (1985). Tree-adjoining Grammars: How Much Context-Sensitivity is Required to Provide Reasonable Structural Descriptions? In Dowty, D. Karttunen, L. & Zwicky, A. (eds)., *Natural language parsing*, 206–50. Cambridge University Press.

Katamba, F. (2004). *English Words.* New York: Routledge.

Kayne, R. (1994). *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press.

Kearns, K. (2000). *Semantics.* Macmillan Press.

Keenan, E. & Comrie, B. 1977. Noun Phrase Accessibility and Universal Grammar. *Linguistic Inquiry* 8: 63–99.

Keizer, E. (2007). *The English Noun Phrase: The Nature of Linguistic Categorization*. New York: Cambridge University Press.

Kidwai, A. (2000). *XP-Adjunction in Universal Grammar*. Oxford University Press.

Koopman, H. & Sportichem D. (1991). The Position of Subjects. *Lingua,* 85, 211–58.

Koopman, H. & Szabolsci, A. (2000) *Verbal Complexes*. Cambridge, Mass.: MIT Press.

Koopman, H. (1984) *The syntax of Verb-Movement: from Verb Movement Rules in the Kru Languages to Universal Grammar*. Dordrecht: Foris.

Kornai, A. & Pullum, G. (1990). The X-bar Theory of Phrase Structure. *Language,* 66, 24–50.

Kreidler, C. (2002). *Introducing English Semantics*. New York: Routledge.

Kremers, J. (2003). *The Arabic Noun Phrase*. Netherlands: LOT.

Laka, I. (1997). *The Basque Language.* University of the Basque Country. Available on (http://www.ehu.es/grammar/).

Lambrecht, K. (1994). *Information structure and sentence form*. Cambridge University Press

Larson, R. & Marušič, F. (2004). On Indefinite Pronoun Structures with APs: Reply to Kishimoto. *Linguistic Inquiry*, *35*(.2), 1-22.

Larson, R. (1988). On the Double Object Construction. *Linguistic Inquiry* 19, 335–91.

Lasnik, H. (1989). *Essays on Anaphora*. Dordrecht: Kluwer Academic Publishers.

Lasnik, H. (1999). *Minimalist Analyses*. Oxford: Blackwell.

Levin, B. (1993). *English Verb Classes and Alternations: A Preliminary Investigation.* Chicago: University of Chicago Press.

Lightfoot, D. (1976). Trace Theory and Twice Moved NPs. *Linguistic Inquiry* 7, 559–82.

Lightfoot, D. Hornstein, N. (eds.) (1994). *Verb Movement. Cambridge:* Cambridge University Press

Longobardi, G. (1994). *Reference and Proper Names*: A Theory of N-Movement in Syntax and Logical Form. *Linguistic Inquiry* 25, 609–65.

Loreto, T. (1987). *Introduction to Linguistics*. Singapore: Longman.

Mahajan, A. (2003). Word Order and (remnant) VP movement. In: Karimi, S. (ed.), *Word Order and Scrambling*. Blackwell, Oxford, 217–237.

Mahmoud, T. (1992). *Abdulqahir Al-Jurjani and Syntactic Theory and Poetry Reading*. Cairo: Al-Azhar University.

Matushansky, O. (2006). Head Movement in Linguistic Theory. *Linguistic Inquiry*, 37, 69–109.

May, Robert (1985). *Logical Form*. Cambridge: MIT Press.

McCarthy, A. (2002). *An Introduction to English Morphology*. Edinburgh University Press.

Miller, J. (2002). *An Introduction to English Syntax*. Edinburgh University Press.

Mohammad, M. (1990). *The Problem of Subject-Verb Agreement in Arabic: Toward a Solution*. In Eid, M. (ed.), Perspectives on Arabic Linguistics I: Papers from the First Annual Symposium on Arabic Linguistics, 95–125. Amsterdam: John Benjamins Publishing Company.

Mohammad, M. (1988). On the Parallelism between IP and DP. In: Borer, H. (ed.), Proceedings of WCCFL VII. CSLI Publications, Stanford, 241–254.

Mohammad, M. (1999). Checking and Licensing inside DP in Palestinian Arabic. In E. Benmamoun (ed.), *Perspectives on Arabic Linguistics XII: Papers from the Twelfth Annual Symposium on Arabic Linguistics*, 27–44. Amsterdam: John Benjamins Publishing Company.

Müller, G. (2004) Verb-Second as vP-First. *Journal of Comparative Germanic Linguistics* 7, 139-274.

Newmark, P. (1988). *A Textbook of Translation*. Hertfordshire: Prentice Hall International, UK, Ltd.

Newmeyer, F. (1986). *Linguistic Theory in America*. Orlando: Academic Press.

Nida, E. (1946). *Morphology: the Descriptive Analysis of Words*. Ann Arbor: University of Michigan Press.

O'Flynn, K. (2009). Prenominal Adjective-Complement Constructions in English. Available on (*babel.ucsc.edu/~hank/koflynnsquib.pdf)*

Ouhalla, J. (1991). *Functional Categories and Parametric Variation*. Routledge, London.

Ouhalla, J. (1994). Genitive subjects and the VSO order in Berber (Unpublished Manuscript). Queen Mary and Westfield College, London University.

Ouhalla, J. (1999). *Introducing Transformational Grammar: From Principles and Parameters to Minimalism* (2nd Ed.). London: Arnold.

Palmer, F. (1994). *Grammatical Roles and Relations.* Cambridge University Press.

Payne, J. (1993). The Headedness of Noun Phrases: Slaying the Nominal Hydra. In Corbett, *et al.* (1993), 114–39.

Pereltsvaig, A. (2006). Head Movement in Hebrew Nominals: A reply to Shlonsky. *Lingua* 116, A1–A40

Perlmutter, D. & Postal, P. (1977). Toward a Universal Characterization of Passivization. *BLS* 3: 394–417.

Pinker, S. (1995). *The Language Instinct*. New York: Harper Perennial.

Pollock, J. (1989) Verb-movement, Universal Grammar, and the Structure of IP. *Linguistic Inquiry* 20, 365–424.

Postal, P. (1974). *On Raising*. Cambridge: MIT Press.

Pullum, G. (1997). The Morpho-lexical Nature of English *to*-Contraction. *Language* 73, 79– 102.

Pysz, A. (2006). The Structural Location of Adnominal Adjectives: Prospects for Old English. *Journal of Theoretical Linguistics,* 3, 59-85.

Quirk, R., Greenbaum, S., Leech, G. & Svartvik J. (1985). *A Comprehensive Grammar of the English Language*. London: Longman.

Radford, A. (1988). *Transformational Grammar: A First Course*. Cambridge: Cambridge University Press.

Radford, A. (1997). *Syntactic Theory and the Structure of English: A Minimalist Approach*. Cambridge: Cambridge University Press.

Radford, A. (2004). *Minimalist Syntax. Exploring the structure of English*. Cambridge University Press.

Radford, A. (2009). *Analyzing English Sentences*. A Minimalist Approach. Cambridge University Press.

Ritter, E. (1986). NSO Noun Phrases in Modern Hebrew. In McDonough. J. & Plunkett, B. (eds.), *Proceedings of NELS 17*. UMass, Amherst: GLSA.

Ritter, E. (1987). A Head Movement Approach to Construct-State Noun Phrases. *Linguistics* 26, 909–929.

Ritter, E. (1991). Two Functional Categories in Noun Phrases: Evidence from Modern Hebrew. *Perspectives on Phrase Structure: Heads and Licensing. (Syntax and Semantics,* 25.*)*, London: Academic Press, 25, 37–62.

Roberts, I. (1997). *Comparative Syntax*. London: Edward Arnold.

Roberts, I. (2009). Head Movement and the Minimalist Program. In Boeckx, C. (*ed.*), *The Oxford Handbook of Linguistic Minimalism.* Oxford: Oxford University Press.

Rosen, C. (1984). The Interface between Semantic Roles and Initial Grammatical Relations. In Perlmutter & Rosen (1984), 38–77.

Rosenbaum, P. (1967). *The Grammar of English Predicate Complement Constructions*. Cambridge: MIT Press.

Rowlett, P. (2007). *The Syntax of French*. Cambridge University Press.

Sadler, L., Arnold, D. (1994). Prenominal Adjectives and the Phrasal/Lexical Distinction. *Journal of Linguistics,* 30, 187-226.

Saeed, J. (2003). *Semantics*. (2nd Ed). Oxford: Blackwell.

Sag, I. & Wasow, T. (1999) *Syntactic Theory: A Formal Introduction* (1st Ed.). Stanford: CSLI Publications.

Sapir, E. (1921). *Language an Introduction to the Study of Speech*. New York: Harcourt, Brace and company.

Sapir, E. (1929). The Status of Linguistics as a Science. In Mandelbaum, D., 160–166.

Saussure, F. (1917/1959). *Course in General Linguistics*, Charles, B., Sechehaye, A. & Riedlinger, A. (eds). New York: McGraw-Hill Book Co.

Saville-Troike, M. (2006). *Introducing Second Language Acquisition*. New York: Cambridge University Press

Schachter, P. (1984). Semantic Role Based Syntax in Toba Batak. In Schachter, (1984), 122–49.

Schachter, P. (1985). Parts-of-speech Systems. In Shopen, T. (ed)., *Language typology and syntactic description*, I, 1–61. Cambridge University Press.

Sells, P. (1985). *Lectures on contemporary syntactic theories.* Stanford: CSLI.

Sgall, P. & Panevová, J. (1988). Dependency Syntax: A Challenge. *Theoretical Linguistics,* 15: 73–86.

Shlonsky, U. (2004). The Form of Semitic Noun Phrases. *Lingua,* 114, 1465–1526.

Shormani, M. (2012). Sources of Syntactic Errors in Yemeni Learners' English Compositions: A Psycholinguistic Analysis, *Arab World English Journal*, *3*(4), 275 – 296.

Shormani, M. (2013a). *L2 Acquisition in the Arab World: An Empirical Study of Yemeni Learners' English Syntactic and Semantic Error Gravity*. Saarbrücken: LAMBERT Academic Publishing, Germany.

Shormani. M. (2013b). Structural Ambiguity in Modern Standard Arabic DPs: A Minimalist Account. In *Proceedings of the International Conference in Honor of Abdelkader Fassi Fehri on "Language, Knowledge, Semiosis, planning and education." University of Mohammed V Rabat.*

Shormani, M. (in press). Free Genitives in Yemeni Arabic DPs: A minimalist Approach. *Linguistic Inquiry.*

Siloni, T. (1991). Noun Raising and the Structure of Noun Phrases. In Bobaljik, J. & Bures, T. (eds.), *Papers from the Third Student Conference in Linguistics. MITWPL,* 14, 255–270.

Siloni, T. (2001). Construct States at the PF Interface. Linguistic Variation Yearbook 1, 229–266.

Skinner, B. (1957). *Verbal Behavior*. New York: Appleton-Century-Crofts.

Sobin, N. (1985). Case and Agreement in the Ukrainian Morphological Passive Construction. *Linguistic Inquiry* 16, 649–62.

Soehn, J. (2005). Selectional Restrictions in HPSG: I'll eat my hat. Proceedings of the HPSG05 Conference. CSLI Publications.

Speas, M. (1990). *Phrase Structure in Natural Language*. Dordrecht: Kluwer Academic Publishers.

Spencer, A. (1991). *Morphological Theory*. Blackwell.

Sportiche, D. (1988). A Theory of Floating Quantifiers and Its Corollaries for Constituent Structure. *Linguistic Inquiry,* 19, 425–49.

Sproat, R. (1985). Welsh Syntax and VSO Structure. *Natural Language and Linguistic Theory* 3, 173–216.

Stowell, T. (1981). Origins of Phrase Structure. Ph.D. dissertation, MIT.

Tomasello, M. (2007). Cognitive Linguistics and First Language Acquisition. In Geeraerts, D. & Cuyckens, H. (ed.), *Cognitive Linguistics*. Oxford: OUP.

Toyoshima, T. (2001). Head-to-Spec Movement. In Alexandrova, G & Arnaudova, O. (eds.), *The Minimalist Parameter: Selected Papers from the Open Linguistics Forum*, 115–136. Amsterdam: John Benjamins.

Travis, L. (1984). Parameters and Effects of Word Order Derivation. Ph.D. dissertation, MIT.

Valin, R. & LaPolla, R. I1997). *Syntax: Structure, Meaning and Function. Ca*mbridge University Press.

Valin, R. (2006). *An Introduction to Syntax*. Cambridge University Press

Vicente, L. (2007). The Syntax of Heads and Phrases: A Study of Verb (Phrase) Fronting. PhD Thesis, Netherlands Graduate School of Linguistics.

Vikner, S. (1995). *Verb Movement and Expletive Subjects in the Germanic Languages.* Oxford: Oxford University Press.

Wayne, W. (*2007*). *Psychology*: *Themes and Variations.* Thomson Wadsworth Publication.

Weerman, F. (1989). *The V2 Conspiracy.* Dordrecht: Foris.

White, L. (1989). *Universal Grammar and Second Language Acquisition*. Amsterdam: John Benjamins.

Wiklund, A. & Bentzen, K. (2007). Rethinking Scandinavian Verb Movement, *Journal of Comparative Germanic Syntax* 10, 203-233.

Williams, E. (1994). *Thematic Structure in Syntax*. Cambridge: MIT Press.

Yule, G. (2006). *The Study of Language by George.* Cambridge University Press.

Zaenen, A., Maling, J. & Thráinsson, H. (1985). Case and Grammatical Functions: The Icelandic passive. *Natural Language and Linguistic Theory* 3, 441–83.

Index

The index includes only subject index and some figures (names of linguists) and languages involved in this book.

abstract, 11, 12, 14, 75, 95, 158, 159, 161
Actor, 63, 148, 150, 177
Adjective Phrases, 103
Adjuncts and Complements, 164
Adverb Phrases, 104
Adverbial Clauses, 50
AdvP, 31
Affected, 63, 142, 148, 150, 151, 177
Agent, 63, 142, 148, 150, 151, 152, 177
Agreement, 67, 80, 173
Al-Jurjani, 20
Alka?abah, 20
Al-Mu?alaqaat, 20
ambiguity, 18
Application of PSRs, 125
Application of X' Theory to Other languages, 182
Arabic, 14, 16, 17, 20, 23, 27, 28, 29, 31, 35, 41, 42, 44, 45, 46, 48, 49, 57, 59, 60, 64, 65, 66, 67, 70, 72, 73, 74, 76, 77, 78, 79, 80, 81, 83, 90, 125, 126, 127, 129, 130, 131, 132, 138, 141, 144, 145, 146, 154, 155, 156, 170, 173, 182, 183, 184, 185, 186, 187, 188
Arbitrariness, 14
Assignment and Assigners, 78
assimilation, 17
Aux, 78, 113, 114, 115, 116, 117, 118, 122, 124, 125, 126, 171
Aux as a Constituent, 113
auxiliary, 26, 56, 62, 68, 70, 113, 114, 115, 116, 117, 118, 171
bare form, 175, 176
Basque, 74
Behaviorism, 12, 23
Binary Branching, 158, 159
C++, 20
Case, 28, 29, 45, 48, 49, 61, 74, 75, 76, 77, 78, 79, 128, 138
Case Marking, 28, 61, 74
Chomsky, 12, 13, 18, 20, 24, 51, 78, 80, 130, 148, 153, 158, 173, 174, 175
circumlocuted, 36
clefts, 35, 41, 42, 59
clitics, 76
Collins Dictionary, 137

Comp, 117, 118, 120
complement, 16, 34, 44, 50, 51, 52, 53, 58, 60, 63, 85, 86, 87, 88, 90, 91, 94, 103, 105, 110, 111, 117, 118, 119, 120, 124, 132, 136, 138, 139, 140, 141, 142, 145, 146, 147, 148, 153, 157, 160, 162, 163, 164, 165, 169, 171, 177, 180, 186
Complement Clauses, 50
Complementizers, 117
Compound Sentences, 55
Concept, 15
conciseness, 11, 39
constituency, 93, 96, 130
Constituency, 41, 93
Constituent Structure, 92, 94
Construct State, 145, 173
Coordination, 39, 41
Creativity, 14
Criteria, 27
Daughterhood, 159
Declarative sentences, 56
Defining Language, 17
Definiteness Spread, 145
dependency relation, 94
ditransitive, 63, 74, 86, 109, 110, 135, 137

double object constructions, 86, 181
DP, 31, 173
Ellipsis, 38, 41
emphatic, 35, 115
empty, 163
EPP, 175, 177, 185, 186
Exclamative sentences, 58
Feminine., 128
Finite and Nonfinite, 44
flat structure, 163
focus, 35
French, 14, 39, 40, 55, 65, 80, 130, 131, 136, 171, 187, 188, 189
function words, 26
gender, 45, 46, 48, 49, 67, 68, 72, 73, 79, 128, 173, 183
Generalizing PSRs, 124
German, 14, 29, 77, 79, 127, 128, 129, 130, 154, 156, 171, 188, 189
grammatical classes, 26
Grammatical Relations, 61
grammatical words, 26
Greek, 16
habit-formation, 12
Head, 160
head agreement, 173
Head Agreement, 173
Head Principle, 16
Heads and Adjuncts, 88
Heads and Complements, 84
Heads and Modifiers, 82
Head-to-Head movement, 177
Hindi, 15, 16, 57, 64, 65, 66, 67, 70, 79, 129, 131, 156, 170, 182, 184, 185, 186, 187
Imperative sentences, 57
inflectional, 27, 46, 67, 75, 76, 170, 172, 183
–ing nonfinite, 121
intelligence, 11, 13
Intermediate Projection, 186
Knowledge of Language, 11
Lakhota, 73, 74, 79
language acquisition, 11, 12, 23, 24, 133
Language and the Individual, 15
language faculty, 15, 21, 23
lexical words, 26
Lexicon, 21, 133, 134, 153, 154
Masculine,, 128
Maximal Projection, 186
Mentalism, 12, 23
Minimal Projection, 186
Modals, 113, 114, 117
Modification, 81
monotransitive verbs, 138
Morphological Criteria, 27
morphology, 16, 22, 23, 24, 27, 30, 41, 70, 134
Morpho-syntactic Criteria, 27
Motherhood, 159
nature, 11, 15, 16, 23, 25, 28, 41, 42, 55, 63, 81, 94, 109, 113, 115, 126, 130, 134, 171, 173, 176
nodes, 99, 126, 158, 159, 160, 161, 162, 169
Non-lexical Categories, 170
non-peripheral, 161
Noun Phrases, 99
Novelty, 15
Number, 49
nurture, 11, 23
orthographical, 22
P&P, 16
parts of speech, 22, 26, 30, 41, 79
passivization, 34
peripheral, 82, 161, 164
Perl, 20
person, 26, 30, 44, 45, 46, 48, 49, 50, 53, 57, 67, 68, 69, 71, 73, 79, 83, 137, 173, 183
phonology, 16, 22, 23, 24, 70, 134
Phrase Structure Rules, 98
Phrases, 30
possibility, 26, 108, 143
Postmodifiers, 83
pragmatics, 16, 134
preciseness, 11, 39
Premodifiers, 83
Preposition Phrases, 105
Principles and Parameters, 16
Properties of Human Language, 13
PSRs, 98, 99, 102, 103, 108, 110, 111, 112, 117, 120, 124, 125, 126, 129, 130, 132, 156, 158, 160, 161, 163, 164, 186, 188
psychic patients, 19
Psychology, 93
Python, 20
Relative clauses, 48
Schemata, 159

selectional restrictions, 85, 147, 148, 149, 150, 151, 153, 154, 155, 177
Selectional Restrictions, 22, 135, 147
semantics, 16, 22, 27, 29, 41, 42, 54, 63, 64, 91, 134, 142, 148, 157
Shormani, 11, 12, 18, 24, 90, 145, 146, 154, 173, 174
Sībawayh, 20
Simple Sentences, 54
Sisterhood, 159
small clauses, 141
Spec, 160, 163, 165, 166, 168, 169, 173, 175, 177, 183, 185, 186
Spec-Head, 173, 186
Species-specific, 13, 24, 25
Spec-IP, 175, 185, 186
Spec-to-Spec Movement, 177
Stimulus-free, 13, 24
Subcategorization Frame, 142, 146, 147
subcategorization properties, 85, 138, 140, 142, 143, 144, 145, 147, 148, 150, 153, 154, 177
Subcategorization Properties, 22, 135
subject-verb agreement, 68, 69, 70, 72, 73, 79, 80, 172, 173, 175, 187, 188
Subordinate Clauses, 46
Substitution, 36, 41
Suggested readings, 24
syntax, 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 30, 32, 41, 42, 43, 48, 50, 51, 52, 54, 55, 56, 57, 59, 62, 63, 64, 67, 70, 75, 78, 81, 82, 84, 85, 89, 91, 94, 98, 99, 111, 120, 123, 125, 131, 133, 134, 135, 139, 143, 144, 151, 152, 153, 154, 156, 157, 174, 175, 177, 179, 180, 186, 187, 188
Syntax as a Scientific Discipline, 156
Terminology, 158
Tests for Phrases, 32
The Nature of Clause, 43
The Nature of Modification, 81
Thematic, 63, 142, 148, 154, 177
topicalization, 33
Trace Convention, 179
Transformational Rules, 175
transposition, 32, 33, 34, 35, 38
Tree Diagrams, 99, 158
triangle, 12, 97, 101
triggers, 69
triliteral, 46, 170
UG, 12, 16, 74
ungrammaticality, 40, 41, 47, 48, 53, 67, 69, 70, 75, 86, 134, 135, 138, 148, 149, 151, 154, 172
Universal Grammar, 12, 24, 74, 161, 187
Verb Phrases, 106
verbal., 12
vocal, 12, 18, 19
V-Raising to I, 116, 175, 177, 186, 188
Word Classes, 25, 26, 27, 30
Word Order, 61
X^0, 160, 161, 165, 186
X-bar schema, 160
X-bar Schemata, 159
X-bar Theory, 129, 155, 158, 159, 160, 161, 186